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The U. S. Pharmacopœia XI and National Formulary VI Will Be on Sale December 16, 1935; Official June 1, 1936. The A. Ph. A. Recipe Book II Is Nearing Completion.

Vol. XXIV, No. 11 NOVEMBER, 1935

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

TRADE MARK

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THE 84th ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN DALLAS, TEXAS, 1936.

The 1936 Meetings of the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, Conference of Pharmaceutical Association Secretaries, of the Pharmaceutical Law Enforcement Officials and the Plant Science Seminar will also be held in Dallas, Texas.

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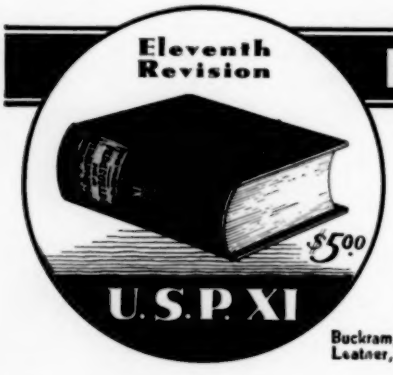

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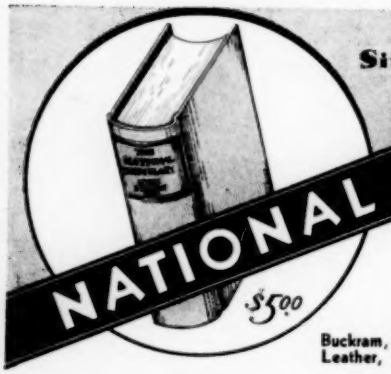

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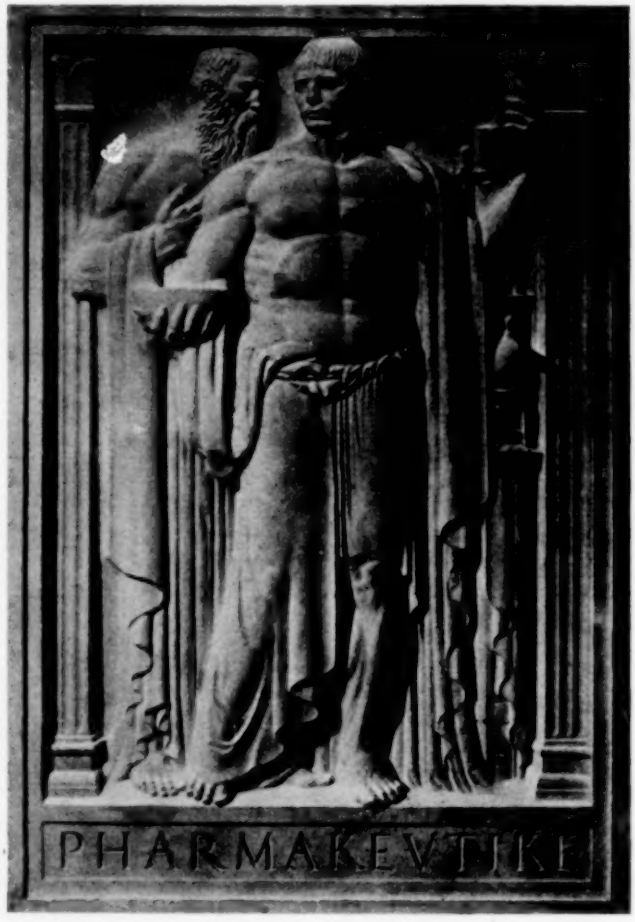
The panel, Phos Kai Elpis of the AMERICAN INSTITUTE OF PHARMACY, represents Light and Hope; the woman, symbolic of Hope, leads the invalid toward Light; the lamp on the pedestal symbolizes, in this interpretation, the knowledge to cure. The woman holds the staff of Æsculapius; the invalid follows, hoping that the Science of Medicine will restore him to health.



The designer, Ulysses A. Ricci, endeavored to express in this bas-relief panel, Pharmakeutike, of the AMERICAN INSTITUTE OF PHARMACY, the advancement of Pharmacy. The youth depicts the progressive step; the senior represents the pioneer, observing the improvements made as fruits of his earlier researches.

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. XXIV NOVEMBER, 1935 No. 11

THE SCULPTURAL PANELS OF AMERICAN INSTITUTE OF PHARMACY.

The designer of the two bas-relief panels of the AMERICAN INSTITUTE OF PHARMACY is Ulysses A. Ricci of New York City, and they were carved in place by John Donnelly under Mr. Ricci's supervision. The latter states that he has endeavored in the panel on the left, Pharmakeutike, to express the progress and advancement of pharmacy. The youth represents the progressive step; the senior represents the pioneer in pharmacy, looking on and observing the advancement made—the fruits of his earlier researches.

The following, part of a paragraph from an introductory lecture to a course in History of Pharmacy by Dr. Edward Kremers before the American Association of Colleges of Pharmacy at the Madison meeting,[1] may be applicable in this connection:

"If Greek literature was brought to Italy and thence to countries north of the Alps after the capture of Constantinople by the Turks, when Greek scholars sought refuge for themselves and their manuscripts in Italy and elsewhere, Greek medical texts had previously been spread over northern Africa and across the Mediterranean into Italy and Spain by the Moors. Not the original Greek, it is true—in this respect the medico-pharmaceutical renaissance differed from the later rebirth of classical Greek literature—but through Syrian and Persian translations and then into Arabic. Just as in ancient Greece lay medico-pharmaceutical practice had gained for itself a social position of its own as opposed to priestly standing, so during the middle ages, medicine and likewise pharmacy acquired footholds of their own quite independently of the monasteries and convents. With it came the separation of pharmacy from medicine as foreshadowed by the public apothecary shop of Bagdad in the 9th century, and as it was further developed in some of the Italian cities as reflected in the edict of Roger of Sicily, and more particularly in the edicts of Frederick II, ruler of the Holy Roman Empire of the German Nation from 1215 to 1250. Not that the separation was complete. For a long time physicians and apothecaries were members of the same guilds. Moreover, the physicians for a long time constituted the ruling branch of the professions united in the same guild and lorded it over their former confrères even after the apothecaries were permitted to have their own guild."

The other panel, Phos Kai Elpis, depicting a woman—hope leading the invalid—represents Light and Hope; the woman, symbolic of Hope leads on toward

[1] See JOURNAL A. PH. A., December 1933, pages 1270–1279.

Light—the lamp on the pedestal, symbolizing in this case the knowledge to cure; she holds the staff of Æsculapius and the invalid follows, hoping that the science of medicine will restore him to health.

The following lines are taken from the address heretofore quoted:

"Medico-pharmaceutical practice of the primitive Celts and Germans had been largely in the hands of 'wise' women and priests, as was the case with other primitive peoples. Pagan practices, medico-pharmaceutical as well as religious, centered about the descendant of the 'wise' woman of an earlier civilization."

Dr. Charles Moore,[1] in speaking at the dedication of the Pharmacy Building, said that into the sphere of the architectual influence exercised by the Lincoln Memorial the Pharmaceutical Building comes. Referring to the former, he said, "the building, like the man, belongs to the ages." "On its inner walls are carved Lincoln's Gettysburg Address and his Second Inaugural, heart-born thoughts expressed in diction comparable with Pericles' immortal oration over the Greeks who fell at Thermopylæ. . . . this building (Pharmacy) has become a vital portion of the frame to the Lincoln Memorial picture." Dr. Moore said—"How vital is this relationship was very recently told me by your reticent architect, John Russell Pope:

"When plans were being made to mark Abraham Lincoln's birthplace at Hodgenville, Kentucky, the program of competition called for one building to embody in its architecture as well as its contents the spirit of Lincoln. I submitted a design based on this representative idea. When a totally different scheme was adopted, I put away my drawing sadly, as every artist does when he finds one of his conceptions fails of realization. Years passed. This Pharmaceutical Building came to me. I made many sketches. One day the design for the Lincoln Birthplace came to mind. I got it out of its repose and found that to my mind essentially it solved the double problem of a building with a purpose and yet in spirit akin to the Monument in whose company it stands.

"Such in brief is the story of the inception and conception of this Pharmacy Building. . . unconsciously the spirit of the design—its elegant simplicity, the richness of its landscape setting, its thorough appropriateness, instantly impress artist and layman alike." Dr. Moore concluded by congratulating the ASSOCIATION on providing a fitting home for the life-saving service the profession performs and expressed the hope that the members would persevere in well-doing in spirit and in architecture.

PROFESSIONAL TRAINING FOR LIBRARIANS.

Charles C. Williamson, dean of the School of Library Service, Columbia University, writing in *New York Times*, of November 10th, states that "an entirely new type of professional training for librarians will result from action recently taken by the faculty of the School of Library Service, Columbia University.

"This action consists of the adoption of a new curriculum designed to prepare the student for the higher levels of professional library service. The public library will, for example, be treated less as an efficient machine for the circulation of books and more as a primary agency in every community for adult education. In all but the larger centres it also will be viewed as the focal point for the cultural and intellectual interests of the whole population outside of the formal education provided by the public schools."

---

[1] Chairman, National Commission of Fine Arts.

EDITORIAL

E. G. EBERLE, EDITOR 2215 Constitution Ave., WASHINGTON, D. C.

THE PHARMACOPŒIA AND NATIONAL FORMULARY.

THE first American Pharmacopœia, "Pharmacopœia for the Use of Army Hospitals" was compiled by William Brown, M.D., at Lititz, Pa., and published in Philadelphia in 1778; a second edition appeared in 1781 (see JOURNAL A. PH. A., November 1927, page 1090; October 1930, page 1041).

The Pharmacopœia of the Massachusetts Medical Society was presented in manuscript June 5, 1807; it was "prepared conformably to a vote of the Counselors, passed on the 3rd day of October 1805, and published in Boston, December 17, 1807." The following paragraphs are quoted from the Preface:

"Such a work is mutually convenient to the physician and apothecary. As it is the business of the physician to prescribe, and the apothecary to prepare medicines the physicians as a body ought to point out those articles of medicine, which they shall ordinarily employ, and the standard preparations of them."

Only the last lines of the last paragraph are quoted:

"They (the members of the Massachusetts Medical Society) cannot therefore hesitate to solicit the aid of all scientific men in effecting a revolution, so very desirable for the correct practice of medicine; a revolution, which concerns the reputation and success of every medical practitioner, and the health and safety of every individual."

The Pharmacopœia of the New York Hospital was published in 1816. A copyright was obtained by Collins & Co. in conformity to the Act of the Congress of the United States, entitled an Act for the Encouragement of Learning, etc. The publication was prepared by Samuel L. Mitchell and Valentine Seaman, *Committee*.

The first Pharmacopœia of the United States, officially recognized and of which the history is given in subsequent editions of the U. S. Pharmacopœia, was prepared under the direction of Dr. Lyman Spalding and appeared December 15, 1820, and copyrighted on the same date by Ewer and Bedington, Cornhill, Number 51; printed by Wells and Lilly, of Boston. (See JOURNAL A. PH. A., August 1917, page 675.)

The United States Pharmacopœia XI will become official June 1, 1936. Instead of making comment at this time, reference is made to the "Report on the United States Pharmacopœia, Eleventh Revision" by Chairman E. Fullerton Cook, published in the September JOURNAL A. PH. A., on pages 796–800 and to the historical accounts printed in the forthcoming and prior editions of the Pharmacopœia.

The National Formulary VI will become official at the same time as the U. S. Pharmacopœia XI. The National Formulary has an historical introduction to which reference is made, to recent Council Letters bearing on the subject and the report of Chairman E. N. Gathercoal, published in the JOURNAL A. PH. A. for August, pages 689–694.

The Pharmaceutical Recipe Book II, will be completed at an early day and reference is here made to the report of Chairman J. Leon Lascoff in the August issue of the JOURNAL, pages 694–699.

The two standards reflect credit on the professions and a valuable service has been rendered by the publication of the Recipe Book.

The Pharmacopœia XI and National Formulary VI will be on sale December 16th.

LIMITATION OF THE NUMBER OF PHARMACISTS.

EVERYWHERE the matter of limiting the number of pharmacists is a subject for discussion and this applies to all other lines of activities; in every case the remedy is clear enough but in most instances, if not all, the application is very difficult or impossible; perhaps we need a new attitude on the definition of rights. There is a difference relative to the right of opening a drug store for service and of another where the purpose is an investment on which to make profit and because of larger means or ability in handling money and merchandise and using these means for the destruction of another with smaller means or lesser ability.

The subject is discussed in European pharmaceutical publications relative to pharmacy; here as elsewhere there are extreme views which are answered by those who hold that every citizen should have free choice of a profession, or at least training for a profession, and no limitations should be placed. Germany reduced the number of University students in 1934 by about 60 per cent. In France, the number of pharmacy students has increased; in Italy the sale of medicinal products is allowed only by pharmacists and the authority to open and carry on a pharmacy is in the hands of the Board of Health and the Mayor; a provision being that a new pharmacy may not be opened at less than 500 metres from another already in existence; modification in sparsely settled communities applies.

The foregoing comments are made for the purpose of showing that the difficulties which obtain here are also subjects of discussion in other countries where the possibilities for regulation are not so difficult; all of which points to the necessity of better coördination, and greater coöperation, and a consideration of right and tempering the desire for wealth and power.

PHARMACY AND THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

BY JOHN C. KRANTZ, JR.*

THE pharmaceutical sciences are very embracive in their scope. For a number of years an effort has been put forth to establish definitely for pharmacy a place in the semi-annual meetings of the American Association for the Advancement of Science. This goal was achieved last June at the Minneapolis meeting, where pharmacy held a session as Section N2 along with Section N Medical Sciences. The meeting was well attended and the papers presented were comprehensive in their scope and indicated the definite increment of progress achieved by the scientific workers in the field of drugs.

Another pharmaceutical program is being planned for the coming St. Louis meeting (December 30th–January 4th) of the American Association for the Ad-

* *Councilor* from the AMERICAN PHARMACEUTICAL ASSOCIATION to the American Association for the Advancement of Science.

vancement of Science. At this meeting Section N2 Pharmacy is planning two sessions, one, a joint session with Section N Medical Sciences, and two, an individual section.

The following papers have been accepted for the two sessions.

PROGRAM, AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(N) Medical Sciences.

(N2) Pharmacy.

1. "The Meaning of the Phenol Coefficients," George Reddish, St. Louis College of Pharmacy. (15 minutes.)
2. "Chemistry of Aloin and Some Related Materials," John H. Gardner, Washington University, St. Louis, Mo. (20 minutes.)
3. "Some Unsymmetrical Aryl Sulfides and their Bactericidal Properties," Noel E. Foss, School of Pharmacy, Duquesne University. (20 minutes.)
4. "The Effect of Chlorinated Ethylenes on the Perfused Leg Vessels of the Frog," John C. Krantz, Jr., C. Jelleff Carr, Ruth Musser and William Harne, School of Medicine, University of Maryland. (15 minutes.)
5. "The Use of the X-ray in Determining the Value of Enteric Coatings," F. S. Bukey, College of Pharmacy, University of Nebraska. (20 minutes.)
6. "The Differential Pharmacognosy of the Two Lobes of the Pituitary Gland," Heber W. Youngken, Massachusetts College of Pharmacy. (15 minutes.)
7. "Microchemical Pharmacognosy," Elmer H. Wirth, School of Pharmacy, University of Illinois. (15 minutes.)
8. "Crude Drug Assays of the U. S. P. XI," C. B. Jordan and H. G. DeKay, School of Pharmacy, Purdue University. (15 minutes.)
9. "The Determination of Iodine in Thyroid Combination," George D. Beal, Mellon Institute, Pittsburgh. (15 minutes.)

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, JOINT SESSSION OF SECTION (N) MEDICAL SCIENCES AND (N2) PHARMACY, PHARMACY PROGRAM.

1. "The New Alkaloid of Ergot," Marvin Thompson, School of Pharmacy, University of Maryland. (20 minutes.)
2. "Further Studies on the Adrenal Cortical Hormone," W. M. Firor and Arthur Grollman, Departments of Surgery and Pharmacology and Experimental Therapeutics, Johns Hopkins University. (20 minutes.)
3. "Cyanide Poisoning and Its Treatment," K. K. Chen, C. L. Rose and G. H. A. Clowes, Indianapolis, Ind. (20 minutes.)

The councilors urge that publicity be given to this meeting in the vicinity of St. Louis and that the schools of pharmacy send delegates to attend and participate in the discussions.

JAPANESE PHARMACOPŒIA COMMISSION.

THE revised law creating the Commission for revising the Japanese Pharmacopœia is placed under the supervision of the Minister of Home Affairs. The Commission is composed of one president and not more than sixteen members. Temporary members may be appointed if necessary for special work. The secretaries are appointed for the Commission on recommendation of the Home Minister.

The Commission comprises seven physicians and surgeons:

Fumihide Okada, chief of the Health Bureau of the Department of Home Affairs. Chikahiko Koizumi, Surgeon-General. Shinichiro Takasugi, Inspector-General of Fleets and Hospitals.

Kenzo Tamura, Doctor of Medicine, professor of the Imperial University of Tokyo. Junjiro Shimazono, Doctor of Medicine, professor of the Imperial University of Tokyo. Taichi Kitajima, Doctor of Medicine, professor of the medical department of Keio University, and the president of the Japan Physicians' Union. Chujiro Nishino, Doctor of Medicine, professor of the medical department of Keio University.

The president of the Commission and seven pharmacists are members:

Katsuzaemon Keitmatsu, Doctor of Pharmacy, professor of the Imperial University of Tokyo (who has the court rank of shoshii and decorated with the Third Order of Merits). Yutaka Kinugasa, Doctor of Pharmacy, member of the Imperial Hygienic Laboratory in Tokyo. Eizo Machiguchi, Doctor of Pharmacy, member of the Imperial Hygienic Laboratory in Tokyo. Dunta Taguchi, Pharmacist-General. Heizaburo Kondo, Doctor of Pharmacy, professor of the Imperial University of Tokyo. Yasuhiko Asahina, Doctor of Pharmacy, professor of the Imperial University of Tokyo. Akira Ogata, Doctor of Pharmacy, professor of the Imperial University of Tokyo. Naoichi Fujita, Doctor of Pharmacy, assistant-professor, Imperial University of Tokyo.

One physician and two pharmacists are temporary members, one of the latter is also a Doctor of Medicine:

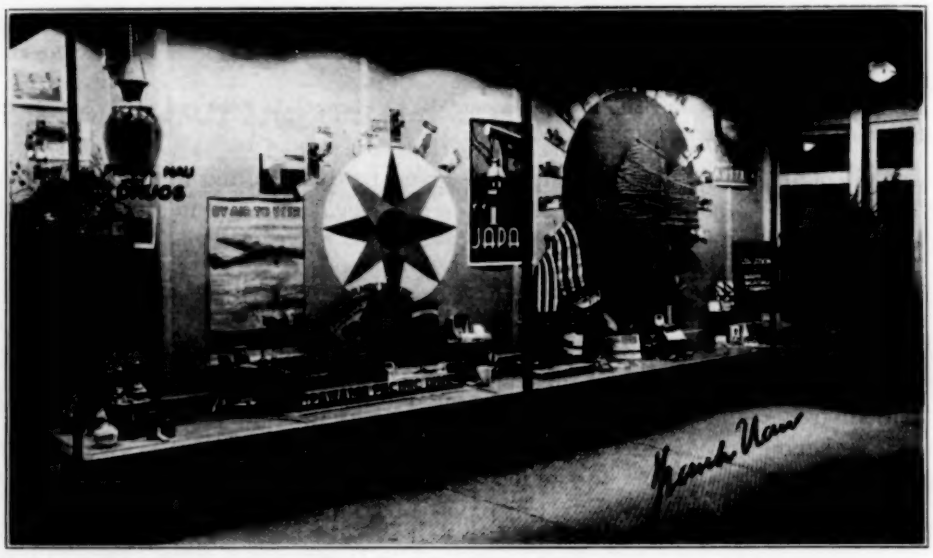
Takehiko Yuasa, director of the Sankyo Kabushiki Kaisha and the president of the Tokyo Drug Manufacturers' Guild. Takaoki Sasaki, Doctor of Medicine, head physician at the Kyoundo Hospital. Kametaro Kawai, Doctor of Medicine, president of the Japan Pharmacists' Union.

The following are secretaries, five are physicians:

Atsuki Shiramatsu, head of the medical affairs section, Department of Home Affairs. Masabumi Ishio, Doctor of Medicine, engineer of the Imperial Hygienic Laboratory in Tokyo. Mikiyoshi Ito, Bachelor of Medicine. Chuzo Hata, assistant-professor of the Tokyo Imperial University, and head physician of its attached hospital. Seishi Takagi, Doctor of Medicine and assistant-professor of the Tokyo Imperial University.

The following are technicians and pharmacists:

Jin Matsuo, engineer in the Department of Home Affairs. Tatsuo Kariyone, Doctor of Pharmacy. Unji Konno, Doctor of Pharmacy. Kiichiro Yoneda, Doctor of Pharmacy. Kakuji Ishifuku, Pharmacist-Lieutenant-Colonel. Shinta Shimizu, Doctor of Pharmacy, Pharmacist-Commander.



Tri-State Window Display of Pharmacist Frank Nau, Portland, Ore.

SCIENTIFIC SECTION

BOARD OF REVIEW OF PAPERS.—*Chairman*, F. E. Bibbins; Glenn L. Jenkins, John C. Krantz, Jr., Heber W. Youngken, L. W. Rowe, L. W. Rising, C. O. Lee, E. V. Lynn, W. G. Crockett.

THE SULPHUR OINTMENTS AND THEIR ASSAY.*[1]

BY CHARLES E. BRADY AND HENRY M. BURLAGE.[2]

INTRODUCTION.

The United States Pharmacopœia and the National Formulary recognize three ointments containing elemental sulphur in the sublimed form: (*a*) Sulphur Ointment, U. S. P., which is a simple mixture of sublimed sulphur (15% by weight) and benzoinated lard; (*b*) Alkaline Sulphur Ointment, N. F., a more complex mixture of sublimed sulphur (20% by weight), K_2CO_3, water and benzoinated lard and (*c*) Compound Sulphur Ointment, N. F., a still more complex ointment containing sublimed sulphur (15% by weight), precipitated $CaCO_3$, cade oil, soft soap and lard.

Since the U. S. P. and the N. F. serve as legal standards for maintaining the strength and purity of official medicaments it seems desirable to have a satisfactory assay for these three ointments.

PROPOSED METHODS.

Methods which oxidize the S to H_2SO_4 and subsequent precipitation with $BaCl_2$ test solution are tedious and difficult to apply to pharmaceutical preparations containing sulphur, especially the ointments. Of the oxidation methods that have been especially applied to these ointments are those of Evers and Elsdon (1). The ointment is heated with a mixture of concentrated HNO_3 and Br_2 and the excess of the latter removed, diluted with water and the aqueous solution extracted with ether to remove the fat; or a mixture of Br_2 and NaOH may be used to bring about the oxidation. Both procedures are tedious and in general give low results.

Simple methods employing organic solvents to separate the fatty material and other ingredients from the sulphur cannot be applied as sulphur is appreciably soluble in most organic solvents. This has been proved by Henville (2) and substantiated by work done in our laboratories.

Attention was, therefore, turned from the usual long oxidation-gravimetric methods to those involving volumetric procedure. In 1932 Castiglioni (3) proposed the conversion of the sulphur contained in acetone extracts of rubber into thiocyanate by boiling with KCN solution under a reflux and evaporating to dryness and the thiocyanate determined by Shulek's method (4) in which the excess of cyanide is converted to glycol nitrile by formaldehyde and then determined by titrating with standard $AgNO_3$ solution in a solution acidified with HNO_3. Allport (5) investigated this method and found that it gave low results for ointments and modified the procedure by treating the sample with a reagent consisting of KCN (40

* Scientific Section, A. PH. A., Portland meeting, 1935.

[1] Pharmaceutical Laboratories, School of Pharmacy, University of North Carolina, Chapel Hill, N. C.

[2] Professor of Pharmacy, School of Pharmacy, University of North Carolina.

Gm.), and triethanolamine (90 cc.) dissolved in H_2O (*q. s.* to 1000 cc.) and refluxing in the presence of soft paraffin and pumice to convert the S to KCNS, adding 0.1*N* $AgNO_3$ and titrating the excess with 0.1*N* ammonium thiocyanate using ferric alum as an indicator.

In 1934 Fleck and Ward (6) proposed the following method which they claim to be shorter than that of Allport's and is not affected by sulphates. The material is refluxed with a solution of Na_2SO_3 to convert the S quantitatively to $Na_2S_2O_3$ and the excess sulphite removed by the addition of HCHO and acetic acid and the thiosulphate titrated by 0.1*N* iodine solution using starch as an indicator. Soft paraffin is added as in the previous method to accelerate the reaction. Work in our laboratories did not substantiate the claims of Allport and of Fleck and Ward with regard to the accuracies and brevities of time claimed for their methods.

In 1933 Shulek (7) proposed a method for the determination of sulphur in sulphur-bearing drugs whereby the sample is treated with KCN in the presence of a small amount of H_2O and acetone converting the S into KCNS and after boiling with boric acid, the thiocyanate is determined volumetrically by the method of the same author (8). This investigator found that in slightly acid solutions alkali cyanides and thiocyanates with bromine water forms cyanbromide quantitatively according to the reaction: $HCNS + 4\ Br_2 + 4\ H_2O = H_2SO_4 + 7\ HBr + CNBr$, the latter compound being stable in acid solution. The excess of bromine is removed by the addition of phenol which does not react with CNBr in the course of 3–4 hours. Potassium iodide is then added which reacts with CNBr in acid solution to liberate iodine as follows: $CNBr + 2\ HI = HCN + HBr + I_2$. The latter substance may be determined by titration with 0.01–0.1*N* sodium thiosulphate using starch as an indicator. Our investigations show that this method could be used for the determination of elemental sulphur in ointments when modified as follows:

"Weigh accurately into a small beaker (50 cc. capacity) a sample of ointment equivalent to 0.02–0.04 Gm. of S. Distribute on the sample about 0.2 Gm. KCN, add 8–10 drops of water and 15 cc. acetone and evaporate to dryness at a temperature sufficiently high to melt the ointment. Repeat the process of warming with acetone and follow by subsequent evaporation twice, using each time 5 cc. of acetone (or until all of the sulphur has been converted). Dissolve the residue in water and filter through a small filter. Heat the fatty material remaining in the beaker with 5 cc. of water almost to boiling, cool somewhat and pass the aqueous liquid through the same filter. Repeat this procedure 3–4 times. The combined filtrates are received in a 125 cc. glass-stoppered Erlenmeyer flask, add 1 Gm. of boric acid and boil gently for 10 minutes. (If a clear filtrate is not obtained, add the boric acid first and in some cases 0.5 Gm. coarse pumice may be necessary to accomplish this, boiling 10 minutes, filtering and washing the filter as described above.) Acidify the cooled solution (amounting to 50–60 cc.) with 5 cc. phosphoric acid (20%), add bromine water dropwise until the solution is distinctly yellow; add phenol (5%) until the solution is decolorized. Shake well and set aside for $^1/_4$ hour; add 0.5 Gm. KI and allow to stand in the dark for $^1/_2$ hour, keeping the flask securely stoppered, and then titrate in the usual manner with 0.1*N* $Na_2S_2O_3$ using *fresh* starch solution as an indicator. (1 cc. 0.1*N* $Na_2S_2O_3$ = 0.01603 Gm. S.)

EXPERIMENTAL.

Samples used in the investigation consisted of Sublimed Sulphur, U. S. P., of a commercial sample of Sulphur Ointment, U. S. P. (No. 1); a sample of sulphur ointment prepared in the laboratory according to the official directions (9)

(No. 1-A); alkaline sulphur ointment prepared according to the N. F. (10) (No. 2); Compound Sulphur Ointment prepared according to the N. F. (10) (No. 3) and a commercial sample stated to be twice the official strength for sulphur ointment (No. 3-A).

TABLE I.

Sublimed Sulphur, U. S. P.	Wt. of Sample.	Wt. Found.	% Purity.
	0.0203 Gm.	0.0201 Gm.	99.01
	0.0205	0.0205	100.00
	0.0217	0.0216	99.54
		Av.	99.52

TABLE II.

Preparation.	Sample No.	Series No.	Wt. of S Found. Observer I.	Observer II.
Sulphur Ointment (0.2 Gm. = 0.03 Gm. S.)	1	1	0.0300 Gm.	0.0303 Gm.
			0.0304	0.0322
			0.0291	0.0284
			Av. 0.0298	0.0303
		2	0.0303	
			0.0299	
			0.0296	
			Av. 0.0299	
		3	0.0293	Grand Average of
			0.0301	All Detns. = 0.0299
			Av. 0.0297	
	1-A	1	0.0304	0.0318
			0.0284	0.0282
			Av. 0.0294	0.0300
			0.0288	0.0311
			0.0296	0.0307
			0.0293	
			Av. 0.0292	0.0309
			Grand Average of Series = 0.0298.	
Alkaline Sulphur Ointment (0.2 Gm. = 0.04 Gm. S)	2	1	0.0387	0.0390
			0.0398	0.0388
			0.0394	
			Av. 0.0393	0.0389
			0.0399	Grand Average of
			0.0398	the Series = 0.0392
			0.0388	Gm.
			Av. 0.0395	

Compound Sulphur Ointment (0.2 Gm. = 0.03 Gm. S)	3	1	0.0293	0.0295
			0.0292	0.0302
			0.0289	0.0295
			Av. 0.0291	0.0297
			Grand Average of Series = 0.0294 Gm.	
	3-A	1		0.0655
				0.0663
				Av. 0.0659

SUMMARY.

1. A modification of Shulek's volumetric method for the determination of Sulphur in drugs is proposed for the assay of the official sulphur ointments.

2. The proposed method has been found to be applicable to the official ointments and is applied with promising results to samples of the three official ointments carefully prepared in the laboratory and to two commercial samples of which one was stated to be twice the official strength.

BIBLIOGRAPHY.

(1) Evers, N., and Elsdon, G. D., *Analyst*, **47**, 199 (1922).
(2) Henville, *Ibid.*, 55, 385 (1930).
(3) Castiglioni, *Zeit. analyt. Chem.*, 91, 32 (1932).
(4) Shulek, E., *Ibid.*, 65, 433 (1925).
(5) Allport, N. L., *Quart. J. Pharm. Pharmacol.*, 6, 431–435 (1933).
(6) Fleck, H. R., and Ward, A. M., *Ibid.*, 7, 178–181 (1934).
(7) Shulek, E., *Pharm. Monatsh.*, 14, 228–229 (1933).
(8) Shulek, E., *Z. analyt. Chem.*, 62, 337 (1923).
(9) United States Pharmacopœia X, page 416.
(10) National Formulary V, pages 269–270.

A NOTE ON THE ASSAY OF MASS OF FERROUS CARBONATE.*

BY JOHN C. KRANTZ, JR., AND C. JELLEFF CARR.[1]

INTRODUCTION.

Based upon the work of Scott (1) and Knop (2), Krantz and Vidal (3) suggested the use of diphenylamine as an indicator in the titration of Mass of Ferrous Carbonate with tenth-normal potassium dichromate. This suggestion was adopted by the Revision Committee of the U. S. P. XI owing to the advantages offered by diphenylamine as an inside indicator, over potassium ferricyanide as an outside indicator.

The formation of the green chromic ion makes it somewhat difficult for the inexperienced worker to determine sharply the end-point of the titration. To obviate this difficulty, the present investigation was begun, with the aim to introduce the volumetric reagent, tenth-normal ceric sulphate solution, in place of the

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corresponding dichromate solution. The use of ceric sulphate as an oxidizing volumetric reagent has been extensively studied by Smith (4).

EXPERIMENTAL.

A sample of Mass of Ferrous Carbonate was prepared according to the directions in the U. S. P. X. The theoretical yield of ferrous carbonate in the mass is 41.5 per cent.

This mass was assayed using potassium dichromate tenth-normal solution with diphenylamine T.S. as the indicator. Using this method, the mass assayed above the theoretical amount of $FeCO_3$, namely, 43.2 per cent. This higher value is in conformity with the findings of Hartley and Linnell (5) who suggested that the oxidations occur in the following order: ferrous iron-carbohydrate indicator. Using tenth-normal ceric sulphate as the volumetric reagent, the mass showed the following percentages of ferrous carbonate: 40.6, 40.4, 40.4, 40.5, 40.5, 40.3, 40.6 and 40.6. When the pure ferrous sulphate is titrated in the absence of honey and sugar, the results with the two volumetric reagents are identical.

The results using ceric sulphate are closer to the theoretical amount of ferrous carbonate and the end-point is much sharper. Ortho phenanthroline, an indicator recommended by Smith (4) in the titration of ferrous salts with ceric sulphate, gave satisfactory results and a strikingly sharp end-point.

The following procedure is recommended.

Dissolve about 1 Gm. of Mass of Ferrous Carbonate, accurately weighed, in 15 cc. of diluted sulphuric acid, add 10 cc. of diluted phosphoric acid and 100 cc. of distilled water. Immediately titrate with tenth-normal ceric sulphate, using 0.5 cc. of diphenylamine T.S. as the indicator. Each cc. of tenth-normal ceric sulphate is equivalent to 0.01159 Gm. of $FeCO_3$.

CONCLUSION.

Ceric sulphate solution has been advantageously employed in the assay of Mass of Ferrous Carbonate.

REFERENCES.

(1) Scott, W. W., *J. A. C. S.*, 46, 1396 (1924).
(2) Knop, J., *Ibid.*, 46, 263 (1924).
(3) Krantz, J. C., Jr., and Vidal, M. J., JOUR. A. PH. A., 14, 882 (1925).
(4) Smith, G. F., "Ceric Sulfate, Vol. I," G. F. Smith Co., Columbus, Ohio (1926).
(5) Hartley, F., and Linnell, W. H., *Quart. J. Pharm. and Pharmacol.*, 7, 549 (1934).

STUDIES ON CUDBEAR.*

BY E. H. WIRTH, L. E. MARTIN AND P. G. SODERDAHL.[1]

Cudbear as a coloring agent for pharmaceutical preparations came into use about 1874 (1) and in spite of complaint involving principally its lack of uniformity, it has enjoyed considerable popularity. Although the tincture was previously official, cudbear as such, did not appear until the N. F. IV, where it was defined as

* Scientific Section, A. PH. A., Portland meeting, 1935.

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"A purplish red powder prepared from species of *Rocella, Lecanora* and other lichens." The monograph in the N. F. IV included tests for brazilwood, logwood and coal-tar colors, and allowed 35% ash. No marked change was made in the N. F. V except that the maximum ash limit was placed at 12%.

Various attempts have been made to replace cudbear with one or another of the synthetic organic dyes, the most favorable one being amaranth suggested by Morrison (2) who offers as his objections to cudbear, the hinderance in filtration, color changes in acid and alkaline solution, fading and lack of uniformity. (3) The bulletins of the N. F. VI, however, show considerable controversy (4) over the replacement of cudbear with amaranth in N. F. formulas, the objections to change being that amaranth does not impart the same color as cudbear, it therefore being unwise to change the color of established preparations; that it is satisfactory; that no lack of uniformity has been observed; and that some states have regulations restricting the use of coal-tar dyes. The controversy finally resulted in the committee voting for the retention of cudbear. At the request of Chairman Gathercoal the studies published herewith were made in connection with the revision of the cudbear monograph.

Earlier objections to the use of cudbear were based particularly upon the lack of uniformity of tinctures made from various lots. Attempts by Gardner and Raubenheimer (5), Arny (6) and Beringer (7) to prepare extracts of cudbear for use in coloring pharmaceutical preparations did not meet with considerable success. In the cudbear of that time it had been noted that sodium chloride (8) seemed to be present in many samples in considerable quantity. Craig (9) among others reported the lack in uniformity in color, concentration and tint. The N. F. IV seemed to solve the variation in the color of preparations colored with tincture of cudbear by substituting cudbear itself in the formulas. It, however, still allowed 35% of ash which did not remedy the sodium chloride situation. In the N. F. V the ash limit was reduced to 12% which then resulted in the disappearance of sodium chloride as a diluent.

Cudbear belongs to that interesting group of dye substances, orchil, cudbear and litmus, which are commercially produced from various lichens, principally *Roccella* and *Lecanora*. Beringer (7) (1912) mentions *Lecanora tartarea* of Northern Europe as the principal source. Most of the present-day cudbear, however, is produced in the Canary Islands, Madagascar and on the African coast.

Very little definite information relative to the manufacture of cudbear is available, the manufacturers apparently guarding their secrets rather closely. In general, however, the lichens contain colorless glucosides (?), acids and ester-like compounds of orcin which upon oxidation in the presence of ammonia split first into orcin, a colorless compound and are then converted into orcein and other colored substances. The variety of colored substances produced is rather considerable and is discussed at length by Beringer (7). Altering the source of the lichens or modifying the process and the alkali used produces different end products which result in the different commercial substances.

Cudbear itself is usually produced by digesting the lichens with about three times their weight of solution of ammonia at 60° for from three days to a week, air being admitted as a considerable requisite. The mixture assumes first a blue and subsequently a red color when the product is dried and ground.

The problem then consisted (1) in studying the uniformity of cudbear; (2) in studying its quality and purity and finally (3) in establishing, if possible, standards to insure these points. To this end 16 samples were obtained from various sources representing in a fair degree the average cudbear on the market. The samples were as follows:

Sample 1. U. of I. Pharmacognosy Museum. Sample about 40 years old.
Sample 2. Local druggist's stock. Age and source unknown.
Sample 3. Mass. College of Pharm. Age and Source unknown.
Sample 4. U. of I. Coll. of Pharm. Dept. of Pharm. stock. Purchased 1933 from a New York wholesale house.
Sample 5. Local druggist's stock. Purchased 1929 from Chicago wholesale house No. 1.
Sample 6. Purchased from Chicago wholesale house No. 2, 1932.
Sample 7. Purchased from Chicago wholesale house No. 3. Age unknown.
Sample 8. Local druggist's stock. Age and source unknown, apparently old.
Sample 9. State Ed. and Research Hosp. Pharmacy. Purchased 1931 from a New York wholesale house.
Sample 10. State Ed. and Research Hosp. Pharmacy. Purchased 1933 from a Chicago wholesale house.
Sample 11. Chicago wholesale house No. 4. Received by them from foreign dealer "A." 1934.
Sample 12. Chicago wholesale house No. 4. Received by them from foreign dealer "B." 1934.
Sample 13. Chicago wholesale house No. 4. Received by them from foreign dealer "C." 1934.
Sample 14. Chicago wholesale house No. 4. Received by them from foreign dealer "D." 1932.
Sample 15. Chicago wholesale house No. 4. Received by them from foreign dealer "E." 1929.
Sample 16. Southern Illinois wholesale house. 1934.

COLORIMETRIC VALUE.

Since cudbear is employed solely as a coloring agent, a study of the colorimetric value of the samples at our command seemed the best way to determine their quality. The method suggested by Scoville (10) employing standardized solutions of inorganic chemicals as devised by Arny and his co-workers (11) appeared well adapted to this purpose. The method is as follows:

"Accurately weigh one gram of Cudbear previously dried over sulphuric acid; macerate it for 18 hours in 100 cc. of a mixture of 3 volumes of alcohol and 1 volume of water, cooled to room temperature before measuring. Shake frequently and allow the drug to settle. To 5 cc. of the clear liquid, accurately measured, add 15 cc. of alcohol, then gradually add distilled water to make 1000 cc. and mix. Compare the color of this freshly prepared solution in Nessler tubes or in a colorimeter with the color of a standard color solution prepared as follows:

Decinormal Cobalt Chloride	0.75 cc.
Two-hundredth-normal Potassium Dichromate	0.30 cc.
Ammonium Carbonate T.S.	3.00 cc.
Distilled water, a sufficient quantity to make	10.00 cc.

The color of the cudbear solution should not be less than that of the standard solution prepared above."

In carrying out the method the standard solution was set in the colorimeter (B. & L. Biological No. 2400) at a depth of 20 mm. The cudbear solutions were adjusted to equalize the color field, and depth readings taken. Several readings (often by several observers) were averaged and recorded. Two macerations were made from each sample and are designated as "A" and "B." Factors were then calculated for each sample indicating its color intensity as compared with 1.00 =

the standard. (Thus, a sample in which the depth reading is less than that of the standard will consequently have a factor larger than 1.00, it being stronger than the standard.) Results are given in Table I.

TABLE I.

Sample No.	Depth in Mm. of Samples. "A."	"B."	Average Depth in Mm.	Factor.
1	18.5	18.1	18.3	20/18.3 = 1.09
2	18.3	18.5	18.4	20/18.4 = 1.08
3	16.4	15.3	15.85	20/15.85 = 1.26
4	17.3	17.0	17.15	20/17.15 = 1.17
5	20.7	20.8	20.75	20/20.75 = 0.97
6	19.5	19.3	19.4	20/19.4 = 1.03
7	16.0	15.7	15.85	20/15.85 = 1.26
8	22.5	22.7	22.6	20/22.6 = 0.88
9	23.8	24.5	24.15	20/24.15 = 0.83
10	20.5	21.3	20.9	20/20.9 = 0.96
11	16.5	15.7	16.1	20/16.1 = 1.24
12	17.0	16.5	16.75	20/16.75 = 1.19
13	15.6	15.0	15.3	20/15.3 = 1.30
14	12.3	12.5	12.4	20/12.4 = 1.61
15	17.3	17.1	17.2	20/17.2 = 1.16
16	17.3	17.0	17.15	20/17.15 = 1.17

COMMENTS ON COLORIMETRIC RESULTS.

(1) Color tints between samples and standard check fairly close, at least close enough to make a semi-quantitative estimation of color. Slight variations in tint between samples may be due to variation in manufacture, or in rare cases to the presence of added coloring substances. In the sixteen samples examined only one such variation was observed, and this was not great enough to materially affect colorimetric observation.

(2) The standard solution should be freshly prepared and should be used at once due to the volatilization of ammonia. The three component solutions used in its preparation, however, are stable, and may be kept as stock solutions. The Ammonia T.S. should, of course, be kept tightly stoppered and the usual precautions involving the effect of ammonia on glass observed. The cobalt chloride and the potassium dichromate solutions should be standardized by the usual chemical means.

(3) Although the strongest sample (No. 14) was twice that of the weakest (No. 9) in colorimetric strength, both were extreme as compared with the entire group. The surprising thing is that for a substance reputed to be so carelessly prepared, the results run astoundingly close. This suggested to us that the manufacturers were employing some means of keeping the color value of cudbear more or less constant. No reference to such a fact appears in the literature or any textbook at our command. Our color findings, however, led us to make a microscopical examination of the cudbear samples with further surprising findings. These results appear elsewhere in this paper. Rather extended subsequent correspondence with foreign and domestic dealers in cudbear, however, substantiated our supposition. It seems to have been a known fact to them that for some time diluents have been used commercially.

(4) It will be observed that 12 samples (75%) ran above standard and 4 (25%) ran below standard. Of those above standard 8, or $^2/_3$ of them ran over 10% above standard, while of those below standard 2 or $^1/_2$ of them ran more than 10% below standard. The standard, therefore, as suggested by Scoville seems to be a fair one. Of the sixteen representative samples only two ran more than 10% below the standard.

SOLUBILITY.

As a possibility for determining the quality of cudbear a solubility method suggested itself. Approximately 70% alcohol (the tincture menstruum) appeared to be the most likely solvent for such a determination. Solubility tests were run in

conjunction with the colorimetric determinations as follows: After a small portion of the supernatant liquid had been withdrawn for the colorimetric tests from the 18-hour macerations, previously described, the balance of each was filtered through a tared filtering crucible, the residue being washed with 70% alcohol until the washings were colorless. The residue was then dried at 100° and weighed, the weight obtained representing that portion of the 1-Gm. sample of cudbear insoluble in 70% alcohol. The results are given in Table II.

TABLE II.—SOLUBILITY.

Sample No.	Percentage of Residue Insoluble in 70% Alcohol. "A."	"B."	Average of A & B.	Color Factor (Table I).
1	63.02	62.48	62.75	1.09
2	69.44	69.65	69.54	1.08
3	65.60	65.17	65.38	1.26
4	72.57	73.22	72.89	1.17
5	69.25	68.91	69.08	0.96
6	69.08	69.42	69.25	1.03
7	67.02	66.10	66.56	1.26
8	66.21	66.04	66.13	0.88
9	83.62	83.18	83.40	0.83
10	83.57	82.79	83.18	0.96
11	73.55	73.52	73.54	1.24
12	73.05	74.00	73.53	1.19
13	65.32	65.15	65.24	1.30
14	68.46	68.97	68.72	1.61
15	73.25	73.32	73.29	1.16
16	65.74	66.12	65.93	1.17

COMMENTS ON TABLE II.

While it is true that some of the samples which run high in color value show a low percentage of material insoluble in 70% alcohol (*e. g.*, No. 3 and No. 13) and that some of the samples which run low in color value show a high percentage of material insoluble in 70% alcohol (*e. g.*, No. 9 and No. 10) it can readily be observed that there is no consistent agreement between colorimetric and solubility results. Solubility results are therefore no criterion of the tinctorial value of cudbear. A comparison of the results, however, does seem to indicate that there may be substances present in some of the samples which do not impart a color but still go into solution in 70% alcohol. It is also interesting to note that between 62% and 83% of cudbear is insoluble in 70% alcohol.

PURITY.

As was previously pointed out the earliest foreign matter reported (8) present in cudbear was sodium chloride. To eliminate this the N. F. V reduced the ash limit from 35% to 12%. In order that our cudbear studies be as complete as possible ash determinations were run on the samples. These appear in Table III.

TABLE III.—TOTAL ASH.

Sample No.	Percentage Total Ash. A.	B.	Av.	Color Factor (Table I).
1	13.74	13.92	13.83	1.09
2	7.3	7.55	7.48	1.08
3	4.96	4.97	4.96	1.26
4	4.29	4.55	4.42	1.17
5	6.14	6.21	6.18	0.96

6	9.58	9.76	9.67	1.03
7	6.55	6.45	6.50	1.26
8	23.87	24.22	24.05	0.88
9	10.43	10.31	10.37	0.83
10	8.76	9.12	8.94	0.96
11	4.72	4.86	4.79	1.24
12	4.69	4.51	4.60	1.19
13	5.11	5.40	5.26	1.30
14	16.05	16.08	16.07	1.61
15	13.47	...	13.47	1.16
16	4.09	...	4.09	1.17

COMMENTS ON TABLE III.

It will be observed that 75% of the samples run well under the N. F. ash limit of 12%. Only one sample (No. 8) runs excessively above this limit. Samples 1 and 8 were definitely known to be of considerable age and therefore suspecting their high ash content to be due to the presence of salt, they were extracted with water and gave the customary microchemical tests for NaCl. Samples 14 and 15, however, gave only traces of chlorides.

Color factors have again been carried over from Table I. As is to be expected there is no correlation between ash and color value: *e. g.*, No. 14, the sample of highest color value runs considerably over the ash limit while No. 16, the sample lowest in ash is only average in color value. On the other hand, however, samples No. 8 and No. 9 do show high ash and low color value while No. 3, No. 11 and No. 13 show low ash and high color value.

There is always a question as to the selection of an ash limit. The present limit of 12% is probably a satisfactory one. At least it is not severe since half of the samples examined ran under 6.5%.

MICROSCOPICAL.

As was previously stated our colorimetric and other analytical results indicated that a microscopical examination of the samples might throw some light on the question of their purity. Such an examination was made, both the original samples and the residues from the (70%) alcoholic extractions being observed. As was to be expected with a substance of the nature of cudbear, the mounts showed considerable quantities of extraneous matter. The most surprising foreign substance found was potato starch, present in variable amounts in about half of the samples and indicating most conclusively that starch is being added as a diluent, presumably to regulate the color value. Since the starch was that of the potato (except No. 13, which was wheat) this adulteration no doubt takes place abroad.

Several other tissue elements, not of lichen origin, were found in many of the samples, the most common being woody tissues and hairs (presumably from leaves). These apparently originate from plant parts either gathered with the lichens through carelessness or added intentionally to the lichen mass during or before treatment.

Hyphæ from the subhymenial layer of the lichen are abundant in the mounts occurring occasionally as tissue fragments but more often torn apart and more or less broken. The hyphæ vary considerably in length and are from 0.002 to 0.006 mm. in diameter. In rare cases they show branching. Fragments of the undifferentiated pseudo-parenchymatous portions of the lichens may also be seen especially after clearing with chloral.

Most of the woody tissue appears to be of a dicotyl source, although coniferous wood was found in some samples. We were unable to identify the botanical source

of either the woody tissue or the hairs. It is highly doubtful whether the woody tissue found was from brazilwood, logwood or other colored woods. It seems rather to be a local adulterant entering through carelessness, being often accompanied by fragments of various bark tissues notably stone cells.

The microscopy of cudbear presents some difficulties. The phloroglucin-hydrochloric acid reaction for lignin cannot be used since the lignified tissue present is already colored pink or reddish by the natural coloring principle of the cudbear. Attempts to remove this coloring principle were more or less unsuccessful. Alcohol will not extract it from the tissue elements. We were, however, able to reduce the dye to its colorless base with sodium hydrosulphite. This reagent, however, also removes the lignin and is therefore of no use in preparing the sample for lignin testing. Identification of woody tissue could be and was based upon the presence of its characteristic elements, tracheæ, tracheids, wood fibres and fragments of medullary rays. Mounts allowed to remain 12–24 hours in chloral became sufficiently clear to facilitate the study of these elements. For the sake of brevity the microscopical results are tabulated in Table IV.

TABLE IV.—MICROSCOPIC.

Sample No.	Potato Starch.	Woody Tissue.	Hairs.	Remarks.	Color Factor.
1	0	+	0		1.09
2	0	++	0		1.08
3	+	+	0	Both pine and dicot. wood	1.26
4	+++	0	0		1.17
5	0	++	+	Hairs long, unicellular	0.96
6	0	++	0		1.03
7	0	+	0	Wood mostly pine	1.26
8	0	+++	0	Dicot. and pine wood	0.88
9	+++	+	+++	Stone cells in groups, hairs unicellular, often in clusters	0.83
10	++	+++	+++	Hairs long, unicellular	0.96
11	0	+++	0		1.24
12	+++	+	0		1.19
13	++ (wheat)	0	+	Endosperm cells of wheat, cross cells of wheat bran	1.30
14	0	+	+	Few curved unicellular hairs, occasional stone cells	1.61
15	+	0	+++	Wavy unicellular hairs, stone cells in groups	1.16
16	+++	0	+		1.17

Explanation of figures.

0 = absent
+ = present
++ = considerable
+++ = abundant.

DISCUSSION OF TABLE IV.

The microscopical studies show that:

(1) Where considerable potato starch is present (4, 12 and 16) the color value is fairly constant (about 1.17), except in No. 9 which appears to be grossly adulterated and is low in color value. Samples 4, 12 and 16 appear to be reduced to a definite color value.

(2) No. 13 is diluted with ground whole wheat.

(3) Where an abundance and a variety of foreign matter occur (9 and 10) the color value is usually low. Samples 9 and 10 also show a high residue insoluble in 70% alcohol (Table II) and No. 10 is excessively high in arsenic. These particular samples may therefore be exceptions. Samples 13 and 14 on the other hand show some foreign matter and are high in color value.

(4) Woody and leaf tissue show no correlation with color value and appear to be present due to carelessness in collecting and treating the lichens.

(5) All samples contain some foreign matter or other, and it may reasonably be said that no such a thing as a "pure sample" of cudbear can be found on the market. By a pure sample is meant one containing only lichen tissue and the oxidized color base.

(6) The addition of starch as a diluent, which seems to be extensively practiced, brings up the question whether such a diluent should be permissible. Both the Pharmacopœia and the National Formulary have in the past specified and permitted inert diluents for certain drugs. Starch is, of course, an inert diluent. If a color standard is to be established there will be a natural tendency to meet it but not to exceed it. If the object of the color standard be that of insuring a uniform drug a specified diluent should be permitted. If, on the other hand, it be the object of the standard to insure the quality of the drug, no such diluent should be permitted and an effort should be made to prohibit within reasonable limit all foreign matter. The standard should then be placed high enough to insure care in manufacture and discourage dilution.

WOODY ADMIXTURE.

Certain woods containing coloring principles seem to be suspected adulterants of cudbear. In the past several editions, the N. F. has included tests for brazilwood and logwood. It would seem, however, that adulteration with these and other colored woods whose habitats are far removed from those regions where cudbear is produced, would be of rare occurrence. Neither time nor authentic samples were available for a very extensive survey of this question. A few experiments, however, were made with the samples of dye-woods available to us. These consisted of logwood, *Hæmatoxylon campechianum;* brazilwood (Pernambuco wood), *Cæsalpina echinata;* hypericum, *Hypericum perforatum;* cam wood, *Baphia nitida;* fustic, *Chlorophora tinctoria* and red saunders, *Pterocarpus santalinus.* Five tests customarily applied to colored woods were employed using the powdered wood itself, cudbear and samples consisting of cudbear containing 25% of the admixed powdered wood. The tests were as follows:

(1) One gram of the comminuted material consisting of woody material or admixtures of woody material and cudbear was macerated in 100 cc. of distilled water for approximately one hour and filtered. The *color* of the filtrate was observed. (The filtrate was used for the following tests.)

(2) Five drops of glacial acetic acid were added to 5 cc. of the filtrate and (A) any color change noted. The mixture was then boiled for one minute and (B) any color change noted. Five drops of stannous chloride T.S. were then added and (C) any color change noted. The mixture was then boiled for one minute and (D) any color change noted.

(3) 2 cc. of basic lead acetate solution were added to 5 cc. of the filtrate and (A) the color change noted. The mixture was then acidified with glacial acetic acid and (B) any subsequent color change noted.

(4) 2 cc. of lime water were added to 5 cc. of the filtrate and the color change noted.

(5) 2 cc. of a 10% aqueous alum solution were added to 5 cc. of the filtrate and the color observed.

The results of the tests will be found in Table V.

COMMENTS ON TABLE V.

A study of Table V shows that while many of the tests are fairly characteristic for the woods themselves, the tests are of doubtful value when the wood is mixed with cudbear. The purplish red coloring principle of cudbear often changes the end color reaction to such an extent as to mask

it entirely or at least to such an extent that it becomes indefinite. It would seem that their histologic characters might be more adaptable to the identification of these woods.

The present N. F. test (our Test No. 2, D) states that logwood and brazilwood give solutions of a deep red color. While this is true for logwood, it is of questionable value for brazilwood. Several samples of brazilwood and Pernambuco wood available to us gave a final light red color alone, and an orange-red color when mixed with cudbear. This final orange-red does not differ enough from the light reddish brown obtained with cudbear to be distinctive.

Attempts to identify the woody material actually occurring in our commercial samples (see Table IV) as one or the other of these colored woods were not successful. The above tests when applied to these samples did not give positive results. As has been previously mentioned it is doubtful whether these colored woods are found as adulterants of cudbear in more than exceedingly rare cases.

All in all, however, it would seem that the question of the identification of the woody adulterants, both the colored woods and others, must be subjected to considerable further investigation before really dependable means for their identification can be established.

TABLE V.—TESTS ON WOODS.

Material.	(1.)	(2.)				(3.)		(4.)	(5.)
		A.	B.	C.	D.	A.	B.		
Cudbear	r. v.	o. r.	r. b.	r. b.	l. r. b.	bl.	r. b.	p.	o. r.
Logwood	d. o. r.	y.	o. y.	d. p.	d. p.	da. bl.	y. b.	p. bla.	d. r.-p.
Brazilwood	o. bf.	y.	y.	l. r.	l. r.	la.	l. y.	r.	y.-r. b.
Hypericum	o. bf.	y.	y.	r.	r.	la.	y.	d. r.	y.-r.
Cam wood	o. y.	y.	y.	o. b.	o. b.	y.	y.	y.	l. y.
Fustic	o.	y.	y.	d. y.	d. y.	y.	g. y.	d. y.	l. g.
Red saunders	l. y. o.	dec.	dec.	dec.	l. r.	dec.	dec.	l. y.	l. y. o.
Cudbear + logwood	d. r.	o.	o.	d. r.	d. r.	bl. r.	b.	p.	r. b.
Cudbear + Brazilwood	r. p.	d. o.	d. o.	o. r.	o. r.	la.	o. r.	p.	r. b.
Cudbear + hypericum	r. p.	o. b.	o. b.	r. b.	r. b.	la.	o.	d. p. r.	r. b.
Cudbear + cam wood	r. p.	o. r.	o.	d. o.	d. o.	la.	o. y.	d. p.	o. r.
Cudbear + fustic	r.	o. r.	o. r.	d. o.	d. o.	r.-bl.	o. r.	d. r.	o. r.
Cudbear + red saund.	p. r.	d. o. r.	d. o. r.	d. o.	d. o.	r. la.	l. o. r.	d. p.	d. o. b.

Explanation of abbreviations: b. brown, bl. blue, bla. black, d. deep, da. dark, dec. decolorized, f. fluorescence, g. green, l. light, la. lavender, o. orange, p. purple, r. red, v. violet, y. yellow.

ARSENIC CONTENT OF CUDBEAR.

Several shipments of cudbear have in the past been denied entry into this country because of high arsenic content. There is no official arsenic standard for cudbear. This work was undertaken to determine the arsenic content of our samples of cudbear.

The samples for the Gutzeit Test were prepared according to the method outlined in A. O. A. C., page 308, part d. (12). After digestion and dilution to a definite volume a small sample was removed and the acidity determined.

The generator used was a modification of that given in Hillebrand and Lundell, page 219 (13). Test-tubes 10 cm. x 1.25 cm. were constricted 6 cm. from one end, and the end then blown out and fire polished, giving a hollow tube constricted 6 cm. from one end. This was fitted to a one-hole rubber stopper, of such size that it fit a 60-cc. wide mouth bottle. The tube for the mercuric bromide paper was 12 cm. long and fitted with a rubber stopper. The lower (longer) portion of the tube contained fluted filter paper 8 cm. x 3 cm. soaked in 20% lead acetate solution and dried. The upper portion contained a roll of the same lead acetate paper well moistened with water and then plugged with cotton and the mercuric bromide tube.

The mercuric bromide strips were strips purchased from A. H. Thomas & Co., and soaked for one hour in 5% alcoholic solution of mercuric bromide, removed and dried.

The test was carried out according to A. O. A. C., page 308, part 4. There agents were all tested and found to be arsenic free. Standards of 0.010, 0.015, 0.020, 0.025 mg. As_2O_3 were run

along with the unknowns each time a determination was made. The lengths of the stains were measured and graphed according to Thomas (14), in which the ratio of the individual length to the total length is plotted against the concentration. This method gives a straight line graph which eliminates the error due to the possibility of several curves being drawn through the same points as when the length is plotted against the concentration. After trial runs to determine the approximate concentration, a sample was chosen which would give a stain within the range of the standards.

Whenever the lower lead acetate paper turned yellow or dark blue the results were not recorded. It was noticed that uniform results could not be obtained when this occurred.

TABLE VI.—ARSENIC CONTENT AS As_2O_3 IN PARTS PER MILLION.

Sample No.	Parts per Million.	Sample No.	Parts per Million.
1	21.0	9	9.3
2	Insufficient for test	10	4325.0
3	13.0	11	93.0
4	1.73	12	2.0
5	35.2	13	1.24
6	78.6	14	Insufficient for test
7	47.7	15	Insufficient for test
8	Insufficient for test	16	0.25

Each result is the average of two or more samples. The accuracy of the Gutzeit Method has been studied by Neller (15) and found to give an average deviation of $\pm 6.6\%$ from the mean of several determinations; approximately the same degree of accuracy is reported by Barnes and Murray (16).

The standard set for certain fruits is not over 1.4 parts As_2O_3 per million. A recent article by Holmes and Remington (17) gives the arsenic content of American Cod Liver Oils as being from 1 to 6 parts per million. Much of the marine life which we use as food contains varying amounts of arsenic. Shrimps contain up to 20 parts of arsenic per million. Norwegians have been taking as much as one ounce of cod liver oil per day without apparent ill effects. If such amounts are harmless in the oils, fruits and marine foods, then in a coloring agent such as cudbear where the actual amount of drug in the finished product is exceedingly small, an arsenic content up to 50 parts per million should be perfectly safe, and possibly justified. It does seem, however, that arsenic is an impurity which enters through carelessness. In a communication from the Department of Agriculture we are advised that six samples received at New York late in 1934 ran 1.2, 1.0, 5.0, 1.0, 2.4 and 1.0 parts per million. It will also be observed that among our own samples several (4, 12, 13, 16) produced in 1933–1934 also ran low in arsenic. This seems to indicate that cudbear with a low arsenic content can be produced if necessary.

The choice of a standard, if it were advisable to establish one, could be based on an amount within the limit of safety as 50 parts per million, but since carelessness appears to be the reason for its presence in large amounts, a maximum of 10 parts per million would be our recommendation. We choose this standard because it would apparently be easy to meet, and would give a coloring agent which would impart practically no arsenic to the finished pharmaceutical preparation. It also corresponds to the arsenic content specified in the present arsenic test of the Pharmacopœia (18).

SUMMARY.

The uniformity, quality and purity of cudbear have been studied. While the commercial samples examined exhibited a surprising uniformity in tinctorial value.

the examination disclosed that several had been intentionally diluted, the most common diluent being potato starch.

(1) A colorimetric method for the determination of quality and a color standard are advised.

(2) Solubility tests are of questionable value in estimating quality.

The discussion of purity involves:

(3) Studies on ash content which reveal that many of the commercial samples run well under the N. F. requirements.

(4) Microscopical studies which indicate considerable adulteration both intentional (the addition of potato starch as a diluent) and unintentional (the presence of woody, bark and leaf tissues).

(5) The usual methods for the detection of dye woods do not give satisfactory results. The presence of dye woods as adulterants of cudbear is, however, probably exceedingly rare.

(6) The study of arsenic content reveals that many samples of cudbear have a considerable amount of arsenic present. Those produced in 1933 and 1934, however, show a smaller content indicating that the presence of arsenic is probably due to carelessness. An arsenic limit of 10 parts per million is tentatively suggested.

REFERENCES.

(1) Wilder, Hans, *Am. J. Pharm.*, 46, 299 (1874).
(2) Morrison, S. W., JOUR. A. PH. A., 22, 1112 (1933).
(3) Morrison, S. W., Bulletins of N. F. VI, page 1115.
(4) Bulletins of N. F. VI, pages 687, 688, 725, 1390.
(5) Gardner and Raubenheimer, *Drug. Circ.*, 55, 515 (1911); JOUR. A. PH. A., 2, 51 (1913).
(6) Arny, H. V., *Ibid.*, 2, 47 (1913).
(7) Beringer, G., *Ibid.*, 1, 820 (1912).
(8) *Ibid.*, 2, 52 (1913).
(9) Craig, *Drug. Circ.*, 56, 189 (1912).
(10) Bulletins of N. F. VI, page 1273.
(11) *Drug. Circ.*, 58, 131 (1914); JOUR. A. PH. A., 12, 839 (1923); *Ibid.*, 22, 956 (1933).
(12) Association Official Agricultural Chemists, Methods of Analysis, 3rd Edition (1930).
(13) "Applied Inorganic Analysis," Hillebrand and Lundell (1929).
(14) Thomas, B. D., *Ind. Eng. Chem.*, 26, 356 (1934).
(15) Neller, J. R., *J. Am. Off. Agr. Chem.*, 12, 332 (1929).
(16) Barnes, J. W., and Murray, C. W., *Ind. Eng. Chem., Anal. Edit.*, 2, 29 (1930).
(17) Holmes, A. D., and Remington, Roe, *Ind. Eng. Chem.*, 26, 573 (1934).
(18) U. S. Pharmacopœia X, page 428.

THE DETOXIFICATION OF STRYCHNINE BY PENTOBARBITAL SODIUM.*

BY EDWARD E. SWANSON.[1]

Clinically, Zerfas and McCallum (1) observed that sodium amytal detoxifies strychnine. In animals, Knoefel, Herwick and Loevenhart (2), Dawson and Taft (3) and Haggard and Greenburg (4) reported that several barbituric acid deriva-

* Scientific Section, A. PH. A., Portland meeting, 1935.

[1] From the Lilly Research Laboratories, Indianapolis.

tives have antidotal action in strychnine poisoning. Swanson (5) found that single effective doses by vein of sodium amytal antidotes $6^2/_3$ lethal doses of strychnine. By small, effective doses, repeatedly injected at intervals as judged by the recurrence of strychnine convulsions, Barlow (6) with pentobarbital sodium and Swanson (7) with sodium amytal observed that 30 lethal doses of strychnine could be antidoted. The purpose of this investigation is to ascertain definitely in experimental animals whether pentobarbital sodium in single, equivalent, effective doses detoxifies strychnine the same as sodium amytal.

Rabbits were used in the experiments. The minimal anesthetic dose of pentobarbital sodium, employed in 5 per cent solution by vein, was determined to be 25 mg. per Kg. and the minimal lethal dose 50 mg. per Kg. It is generally agreed that 0.6 mg. per Kg. injected subcutaneously is the fatal dose of strychnine sulphate in rabbits. The procedure was the same as that used by Swanson (5); that is, the poison is injected subcutaneously, and a minimal anesthetic dose of the barbiturate is given simultaneously by vein or mouth.—See paragraph under Table.

TABLE I.—DETOXIFICATION OF STRYCHNINE SULPHATE BY PENTOBARBITAL SODIUM.

Without Barbiturates.				With Barbiturates. Injected Intravenously Pentobarbital Sodium 5%, 25 Mg. per Kg.					With Barbiturates. Administered Orally. Pentobarbital Sodium 75 Mg. per Kg.				
Number of Rabbits.	Dose of Strychnine Mg. per Kg.	Number Died.	M. L. D. Mg. per Kg.	Number of Rabbits.	Dose of Strychnine Mg. per Kg.	Number Died.	M. L. D. Mg. per Kg.	Sodium Amytal 10%, 50 Mg. per Kg. M. L. D. Mg. per Kg.	Number of Rabbits.	Dose of Strychnine Mg. per Kg.	Number Died.	M. L. D. Mg. per Kg.	Sodium Amytal 150 Mg. per Kg. M. L. D. Mg. per Kg.
3	0.3	0		5	2	0			5	1.0	1		
6	0.4	1		5	2.5	3			15	1.25	5		
5	0.5	0	0.6	5	3.0	5	2.5	4.0	15	1.50	6	2.0	2.4
6	0.6	4		5	3.5	5			15	2.0	11		
3	0.7	3											

As shown in the table, with 25 mg. per Kg. of pentobarbital sodium by vein, the M. L. D. of strychnine is 2.5 mg. per Kg. ($4^1/_6$ M. L. D.'s of strychnine). With sodium amytal (50 mg. per Kg., the minimal anesthetic dose), the M. L. D. of strychnine is 4 mg. per Kg. ($6^2/_3$ M. L. D.'s of strychnine). By the oral administration of 75 mg. per Kg. of pentobarbital sodium, the M. L. D. of strychnine is 2 mg. per Kg. ($3^1/_2$ M. L. D.'s of strychnine). The M. L. D. of strychnine with equal effective doses of sodium amytal (150 mg. per Kg. by mouth) is 2.4 mg. per Kg. (4 M. L. D.'s of strychnine). Thus, either by vein or by mouth in single, equivalent, effective doses, pentobarbital sodium is not as efficient in antidoting strychnine as sodium amytal. This difference is probably due to the difference in duration of action of these barbiturates. With equal, effective doses of sodium amytal, the duration of action is obviously longer than that of pentobarbital sodium. Thus, during the critical period of strychnine poisoning, sodium amytal has a longer period of action or a more sustaining effect.

CONCLUSIONS.

1. Pentobarbital sodium has an antidotal action in strychnine poisoning.
2. In single, equivalent doses pentobarbital sodium is less effective in strychnine poisoning than sodium amytal.

REFERENCES.

(1) Zerfas, L. G., and McCallum, J. T. C., *Anesthesia and Analgesia*, 8, 349 (1929).

(2) Knoefel, P. K., Herwick, R. P., and Loevenhart, A. S., *J. Pharmacol. & Exper. Therap.*, 32, 397 (1930); 33, 265 (1931).

(3) Dawson, W. T., and Taft, C. H., *Proc. Soc. Exptl. Biol. Med.*, 28, 917 (1931).

(4) Haggard, H. W., and Greenburg, L. A., *J. Am. Med. Assoc.*, 98, 1133 (1932).

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ASSAY OF LINIMENT OF CAMPHOR.*

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Various methods have been suggested for the determining of camphor in Liniment of Camphor.

Mann (2) suggested counterbalancing two pairs of filter papers, pouring 0.4 to 0.5 Gm. of Liniment of Camphor on one pair and an identical weight of olive oil on the other pair. These two sets of papers were then to be exposed to the temperature of a hot air bath for about twenty minutes and again weighed to determine the amount of camphor present. Cook (3) found that heating at 100° C. for three hours drove off all but about one-half per cent of the camphor and, therefore, suggested adding about one-half per cent as a correction factor.

Cowie and Dickson (4) ascertained that 20 Gm. of camphor in 80 cc. of olive oil measured 100 cc. and that, therefore, the volume and weight of camphor in the finished liniment were identical. They proposed to take the specific gravity of the liniment at 15.56° C., place the weight equivalent to 10 cc. in a beaker, weigh 8 cc. of olive oil in a similar beaker and heat in a sand bath at 150° C. for thirty to forty minutes, making a correction for the loss in the oil.

Lothian (5) recommended placing the liniment in a shallow dish, such as the cover of a petri dish, to a depth of about one-half millimeter. The dish was then supported on a copper ring and leveled on the water-bath to obtain a uniform layer. This was heated one hour and weighed. He found that further heating would cause a gain in weight of the olive oil while the oil, itself, under these conditions did not gain. This indicated that the oil was affected by the camphor and, therefore, he placed no reliance on correction figures.

Wallace and Plummer (9) found that cottonseed oil oxidizes faster when heated with camphor than when heated alone as determined by the refractive index, the saponification value and the iodine value before and after heating. They found it was necessary to heat cottonseed oil at 120° C. for five hours to completely remove the camphor.

Kebler and collaborators (13) prepared a standard 20% solution of camphor in cottonseed oil and found the optical rotation to be plus 58.5 on the sugar scale in a 200 mm. tube. In a series of determinations heating to 150° C. to practically constant weight gave fairly concordant results with the polarimetric determinations. They stated that heating may give slightly high results, due to the presence of moisture.

Miller (14) says best results are to be obtained in a flat bottomed platinum dish at 110° C. for 90 minutes in a well ventilated oven.

Poe, Lipsey and Vaughn (11) made a study of the U. S. P. method for determination of camphor in Liniment of Camphor and found that the method gave consistently low results, due to the oxidation of the olein in cottonseed oil. Various kinds of dishes were used, but none proved satisfactory.

Dowzard (1) made a series of gravimetric assays on Liniment of Camphor and determined the optical rotation of the samples in angular degrees in a 100-mm. tube at 15° C. He then divided the rotation by the per cent of camphor found gravimetrically to obtain a factor whereby

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the observed rotation could be converted into per cent camphor. For the seven assays listed, the average factor was found to be 1.962.

Cook (3) pointed out that a polarimetric method becomes complicated by the fact that a solution of camphor in olive oil shows a different specific rotation (plus 50.63°) from that exhibited by an alcohol solution (plus 43.52°) and that a correction must, therefore, be made.

Hund (6) determined that cottonseed oil showed no optical rotation and on accurately prepared 10% and 20% solutions of camphor in cottonseed oil found that at 13° C. one per cent camphor showed an average rotation of 0.493° in a 100-mm. tube. Per cent by weight is, therefore, found by dividing the reading in a 100-mm. tube by 0.493. This gave fairly concordant results with the gravimetric method. Malosse (7) says that the specific rotatory power of camphor in olive oil increases with the dilution.

Von Friedrichs (8) studied the polarimetry of camphorated oil with reference to the oil used as a solvent. For liniment prepared with olive oil he derived the factor: Per cent camphor $= 1.958 \times \frac{\text{Rotation observed}}{\text{Length of tube in decimeters}}$. Factors are also given for liniments prepared with other oils. He found that ordinary deviations of temperature were almost negligible.

David (10) suggested that 4.0 Gm. of camphorated oil be placed in a flask, together with 5 Gm. of calcium oxide and 100 to 120 Gm. of water, and the mixture distilled until 60 cc. of the distillate has been collected in a graduated cylinder. Twenty Gm. of sodium chloride were added to the distillate and the condenser washed with ether, collecting the ether in the same cylinder. Ether was added to about 50 or 60 cc. and the mixture thoroughly shaken. An aliquot of the ether was then poured into a tared flask, weighed and evaporated on the water-bath, and the residual camphor weighed. From this, the per cent of camphor in the original sample was calculated. Lajos (12) reports a method identical with this.

In connection with current work on U. S. P. revision, an assay method has been proposed (15) in which the liniment is dried in an oven maintained at 110° C. for two hours under a stream of carbon dioxide.

Work was undertaken to obtain comparative results by polarimetric and gravimetric methods. Dowzard's factor was used in the polarimetric work. The carbon dioxide method was followed as outlined in the "Bulletin of the Sub-Committee on Organic Chemicals." A third determination was made in an electric oven at 110° C. without carbon dioxide protection, controls being run on the oil of cottonseed used for the liniment.

	Per Cent Camphor in Sample.		
	Polarimetric.	Under CO_2 at 110° C.	Exposed to Air at 110° C.[1]
Sample No. 1	18.44%	18.63%	18.25%
Sample No. 2	19.19%	19.52%	19.02%
Sample No. 3	19.66%	19.68%*	19.41%

* The actual figure was 20.74 but correction of 1.06 was necessary due to loss when the oil, itself, was dried.

[1] The results given for the assays exposed to air at 110° C. are corrected for increase or decrease in weight of the oil used.

Twenty-eight samples of cottonseed oil were tested for volatile matter at 110° C. under carbon dioxide for two hours; only two samples showed any significant change. The results were as follows:

1 0.01 % increase	8 0.04 % increase	15 0.03 % increase	22 0.002% increase
2 0.01 % loss	9 0.04 % increase	16 0.004% increase	23 0.08 % increase
3 0.81 % loss	10 0.05 % increase	17 0.02 % increase	24 0.085% increase
4 1.79 % loss	11 0.005% increase	18 0.015% increase	25 0.039% increase
5 0.02 % increase	12 0.04 % increase	19 0.02 % increase	26 0.068% increase
6 0.01 % increase	13 0.07 % increase	20 0.06 % increase	27 0.066% increase
7 No loss or gain	14 0.007% increase	21 0.09 % loss	28 0.065% increase

REFERENCES.

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6 0.01 % increase	13 0.07 % increase	20 0.06 % increase	27 0.066% increase
7 No loss or gain	14 0.007% increase	21 0.09 % loss	28 0.065% increase

A known solution of camphor in cottonseed oil was made up in a glass-stoppered, tared Erlenmeyer flask; 103.8016 Gm. of cottonseed oil were weighed into the flask and 25.9704 Gm. of camphor were added to make 129.8520 Gm. of exactly 20% Liniment of Camphor. The flask was tightly stoppered immediately after the addition of the camphor. The mixture was warmed gently (not over 40° C.) and shaken until the camphor was completely dissolved. The weight of the flask and contents was then checked to determine possible loss during solution; a loss of 0.0123 Gm. was found, but as this represented only 0.01% of camphor it was disregarded. Optical rotation of this liniment was then determined in a 50-mm. tube at 25° C. and found to be plus 5.07. The oil used in the preparation of the liniment had a rotation of minus 0.03 in a 50-mm. tube at 25° C. Using Dowzard's factor this gave 19.91% camphor based on the rotation of the liniment. When corrected for the rotation of the oil, the result was found to be 20.01% camphor. By the carbon dioxide method at 110° C. the prepared liniment showed 20.02% camphor, but a blank on the oil showed a loss of 0.13% making a net result of 19.89% camphor. Another portion heated in a glass evaporating dish at 110° C. till no odor of camphor was discernible showed 19.30% camphor, but a blank on the oil corrected this to 19.92% camphor.

	Polarimetric.	CO_2 Method.	U. S. P. X Method.
Liniment	19.91% camphor	20.02% camphor	19.30% camphor
Correction for Oil	plus 0.10%	minus 0.13%	plus 0.62%
Net	20.01% camphor	19.89% camphor	19.92% camphor

It is apparently necessary to run a blank on the particular oil used in any given Liniment of Camphor if an accurate assay is to be obtained.

REFERENCES.

(1) Dowzard, *Chemist and Druggist*, 56, 328 (1900).
(2) Mann, Arthur W., Proc. A. Ph. A., 51, 630–631 (1903).
(3) Cook, E. Fullerton, Proc. A. Ph. A., 54, 637 (1906).
(4) Cowie and Dickson, *Ibid.*, 54, 637–638 (1906).
(5) Lothian, *Ibid.*, 54 638 (1906).
(6) Hund, *Ibid.*, 56, 91–92 (1908).
(7) Malosse, Year Book, A. Ph. A., 3, 201 (1914).
(8) O. von Friedrichs, *Ibid.*, 7, 98 (1918).
(9) Wallace and Plummer, *A. J. P.*, 93, 600–604 (1921).
(10) David, Year Book, A. Ph. A., 17, 1115, (1928).
(11) Poe, Lipsey and Vaughn, Jour. A. Ph. A., 18, 580–586, (1929).
(12) Lajos, Year Book, A. Ph. A., 18, 429–430 (1929).
(13) Kebler and collaborators, Jour. A. Ph. A., 6, 617–618 (1917).
(14) Miller, *Ibid.*, 6, 683 (1917).
(15) "Bulletin of the Sub-Committee on Organic Chemicals," U. S. P. XI Revision, page 335.

"APOTHECARY SHOPS OF COLONIAL TIMES."*

A compilation of scattered historical data published in pharmaceutical literature and other sources of the past few years and describing apothecary shops, proprietors and distinguished customers of colonial days. The oldest American apothecary shop still in existence and doing business is the Rau Pharmacy in Bethlehem, Pa. The oldest record of an apothecary shop in America (1646) is that of Wm. Davies of Boston, Mass. This was probably the first store devoted exclusively to Pharmacy in America.

* Abstract of a paper before Section on Historical Pharmacy, A. Ph. A., Portland meeting 1935—by Millicent R. LaWall.

TINCTURE OPIUM.*,[1]

BY P. L. BURRIN AND F. E. BIBBINS.

Tincture of opium that was made according to directions given in the United States Pharmacopœia (1) contained a very large amount of precipitate in a short time. This precipitate continued to form even after aging and subsequent filtration. A sample of such a product that had been aged and filtered several times during its manufacture was still so turbid that one could not see through a column of the liquid which was 20 millimeters in diameter. This sediment does not seem to adhere to the sides or the bottom of the bottle, but remains thoroughly suspended for a long time. The unsightly appearance of such a product will immediately suggest the desirability of a more elegant tincture.

The United States Dispensatory has the following statement regarding tincture of opium which has precipitated:

> "Laudanum when long kept with an occasional exposure to air becomes thick from evaporation of a portion of the alcohol and the deposition of solid matter. If given in this state, it often acts with unexpected energy, and death has resulted in infants from doses which would have been entirely safe if the tincture had been clear" (2).

The method of preparing tincture of opium as outlined in the French Codex (1908) is somewhat different than the U. S. P. X method. The French tincture is manufactured by dissolving an aqueous solid extract of opium in 70 per cent alcohol. The solid extract of opium is prepared as follows: Opium is cut in fine pieces and macerated in distilled water. This is expressed, and a second extraction made. The two liquids are then combined and reduced to a soft extract on a water-bath. This extract is then dissolved in distilled water and filtered. The filtrate is again reduced to its former consistency (3).

In order to develop a method whereby the objectionable precipitate in tincture of opium might be eliminated, several experiments were tried. The results of quite a number of experiments can be reduced to three, which will properly illustrate the procedure.

The following formula was used:

Granulated opium	100 Gm.
Paraffin	50 Gm.
Alcohol	200 cc.
Water, distilled, a sufficient quantity to make	1000 cc.

The tincture was prepared by dissolving the proper amount of opium in hot water. We allowed this mixture to stand over night; filtered the liquid, and added water distilled *q. s.* to make 250 cc. This aqueous mixture was heated on the water-bath until it was reduced to about 150 cc. This concentrate was cooled, and paraffin added. The mixture was then heated just sufficiently to melt the paraffin, and the whole was thoroughly mixed. After the paraffin had solidified, the product was allowed to stand twenty-four hours. The pellicle of paraffin was pierced, and the liquid poured off. The paraffin was washed with sufficient dis-

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* Section on Practical Pharmacy and Dispensing, A. PH. A., Portland meeting, 1935.

[1] From the Control Laboratories, Eli Lilly and Company.

tilled water to make a total of 800 cc. This liquid was filtered, and 200 cc. of 95 per cent alcohol added. This resulted in a fairly clear product.

Tincture of opium made by this method after aging thirty days was clear. One can easily see through 20 millimeters of the liquid.

Sixty days' aging, with subsequent filtration, further improved the clarity of the product, and gave us a brilliant tincture.

This procedure does not entirely inhibit the formation of the precipitate. However, the precipitate that forms on the sides and bottom of the bottle was more or less of a scaly nature, and while it will flake off and mix with the contents of the bottle, yet it does not produce a turbid and unsightly tincture. A product made by this method could be used in dispensing very easily, merely by decanting the clear portion.

A further improvement on this formula can be made by changing the procedure slightly. An example of such a formula follows:

Granulated opium	100 Gm.
Paraffin	50 Gm.
Alcohol	200 cc.
Water, distilled, a sufficient quantity to make	1000 cc.

The granulated opium was dissolved in about 200 cc. of hot water, and allowed to stand overnight; filtered, and the filter paper washed with water *q. s.* to make about 250 cc.

This aqueous mixture was then heated to 77–80° C., and kept at this temperature until it was evaporated to about one-half volume. The paraffin was added to this, and allowed to melt. The mixture was then thoroughly beaten and allowed to cool.

After the paraffin had solidified, the pellicle was punctured and the liquid drained off. The paraffin was washed with enough distilled water to make a total of 800 cc. This was then filtered, and 200 cc. of alcohol mixed with the filtrate.

A portion was assayed, and the product diluted according to this assay. A sample of this mixture after aging 7 days and then filtering had much less precipitate in it than one made by the regular U. S. P. X method.

A sample that was aged 30 days and then filtered showed improvement in the amount of precipitate thrown down upon longer aging.

Sixty days' aging was found to further reduce this quantity of final precipitate.

A sample of tincture that had been made by this method and aged sixty days showed only a very small amount of precipitate. This precipitate adhered to the bottom and sides of the bottle as a hard scale, which could be shaken loose, but immediately settled to the bottom. Therefore, such a tincture could be used for dispensing very conveniently, as the clear product could be decanted readily from any dispensing bottle.

A tincture that was made according to the U. S. P. X method contained a very thoroughly suspended and muddy precipitate which, even after long aging, did not allow a clear portion to be decanted.

These two groups of experiments were followed by a third one, in which the same procedure was followed, except with a change at only one point. At the

stage where the aqueous mixture of opium was reduced, the liquid was boiled for 15 minutes, and allowed to stand overnight, instead of being maintained at a temperature of 77° to 80° C. The result of this procedure was even better than the previous experiments. The amount of precipitate in this tincture was materially reduced, and at the end of eighteen months had not shown any further sedimentation. An assay on the clear supernatant liquid showed no loss in potency during this period.

This experiment was repeated with opium from several different shipments in order to be sure that such a formula would be adaptable to the material usually obtained in commerce.

It has been suggested by some that caramel should be added to tincture of opium as a coloring agent. In order to prove that this might have some effect on the resulting precipitate, samples of all experiments were colored with a small amount of caramel. The results of all such experiments performed were the same; namely, a small amount of additional caramel to any of these tinctures increases the amount of precipitate, or at least the character of its formation. In all cases in which caramel had been added to the tincture, these products showed a fine, well-suspended precipitate which had no tendency to coagulate, and was very easily mixed by shaking. It is interesting to note that the samples colored with caramel showed the same easily suspended, and muddy precipitate that is characteristic of the U. S. P. product. Therefore, the addition of caramel is objectionable.

CONCLUSIONS.

Since a tincture of opium made by the method outlined above is free from this large amount of light, muddy precipitate that is characteristic of the U. S. P. product, we suggest that the formula for tincture opium U. S. P. be modified slightly so that a product can be made which will remain clear for a considerable period of time. Furthermore, the use of caramel as a coloring agent causes an additional precipitate, which is undesirable.

REFERENCES.

(1) The Pharmacopœia of the United States, Tenth Decennial Revision, 400 (1926).
(2) The United States Dispensatory, Nineteenth Edition, 1280 (1907).
(3) French Codex, 438 (1908).

A STUDY OF COMPOUND CRESOL SOLUTION.*

BY K. L. KAUFMAN[1] AND C. O. LEE.[2,3]

Compound Solution of Cresol was first made official in the U. S. Pharmacopœia VIII. It has been continued in the succeeding revisions with but slight changes in the formula and procedure.

As a germicide the use of cresol is attributed to German workers (1). The fact that it is soluble in a soap solution has led to its wide use in such preparations which are well known by the official titles and various trade names.

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* Section on Practical Pharmacy and Dispensing, A. Ph. A., Portland meeting, 1935.

[1] J. K. Lilly fellow, Purdue University School of Pharmacy, 1933–1936.
[2] Professor of Pharmacy.
[3] Purdue University School of Pharmacy, La Fayette, Indiana.

DIFFICULTIES WITH THE OFFICIAL FORMULA.

Compound Cresol Solution has been regularly assigned to our students to make for a number of years. We have observed that they find it hard to prepare. Also that the formula of the U. S. P. X is more difficult to make than that of the U. S. P. IX. We have come to the conclusion that the present official formula is objectionable for the following reasons:

(*a*) The time required for completing the reaction and effecting a solution is too long.
(*b*) Two alkalies are used where one is sufficient.
(*c*) Possible loss of cresol, and changes in the product, due to continued heating necessary to complete the reaction.

IMPROVED PROCEDURES STUDIED.

As a result of our observations and experiences, with this preparation, we have sought to eliminate the major objectionable features in making it. In addition several other oils, having saponification numbers close to that of linseed oil, have been used in preparing the cresol solution. These have all been studied with respect to their phenol coefficient, surface tension, ease of manufacture, penetration power, and general appearance.

SPEEDING UP THE REACTION.

The liquor was prepared according to each of the formulas of the U. S. P. VIII, IX and X. From the standpoint of the time required the U. S. P. IX formula was the most desirable. It contains but one alkali and permits the use of a small amount of alcohol which, we assume, catalyzes the saponification reaction.

In an effort to determine the accuracy of our assumption several samples were prepared in which alcohol was added in varying amounts and at various stages in the process. When no alcohol was used the time required for complete saponification was much longer.

An effort was also made to speed up the saponification reaction by substituting methyl alcohol and chloroform for ethyl alcohol. The last traces of chloroform were hard to remove and methyl alcohol proved to be no better than alcohol so the use of these was abandoned.

THE USE OF OILS OTHER THAN LINSEED.

It has been repeatedly suggested that the use of any suitable oil be permitted in making compound cresol solution. Such liberties with the official formula would raise questions as to the uniformity of the finished solutions for which the Pharmacopœia strives. Then too the germicidal value and other properties of the solutions made from the various other oils are unknown. For these reasons we concluded to study the effects of substituting other oils in the formula. Those used were expressed oil of almond, olive, corn, sesame, sunflower, peanut and soy bean oils. The saponification ranges of these are close to that of linseed oil which served as a control.

The results of our studies upon the compound cresol solutions made from these eight well-known fixed oils are given in Table I following. The samples were all prepared according to the formula and procedure which we have proposed later in this paper.

The results clearly indicate that any of the oils named yield good compound cresol solutions. The eight samples tested proved to be practically alike in all of the essential properties.

TABLE I.

Sample No.	Oil.	Specific Gravity.	Color.	Effect of 1–250 Dilution.	Phenol Coefficient.* *B. Typhosus.*	Phenol Coefficient.* *S. Aureus.*	Penetration* 1–100 Dilution *S. Aureus.*
19	Soy bean	1.026	Dark red amber	Slightly cloudy	2.40	1.75	None
35	Linseed	1.032	Reddish amber	Clear	2.30	1.80	0–0.2 mm.
36	Olive	1.027	Amber	Clear	2.10	2.10	None
37	Peanut	1.027	Reddish amber	Clear	2.00	2.10	None
38	Corn	1.027	Light red amber	Clear	2.35	2.00	None
39	Almond	1.026	Light amber	Clear	2.65	2.45	None
41	Sunflower	1.025	Light red amber	Clear	2.30	2.00	None
42	Sesame	1.026	Light red amber	Clear	2.00	2.00	None

* The authors are indebted to Mr. F. L. Willis, Department of Biology, for the penetration studies, and to Mr. G. L. Baker, J. K. Lilly fellow, School of Pharmacy, Purdue University, for the phenol coefficients.

THE QUESTION OF SOY BEAN OIL.

The use of soy bean oil in the manufacture of the official Compound Solution of Cresol has been urged by manufacturers (2), as well as independent workers (3). They have argued that it is much cheaper and makes a product which is, in every way, comparable to the official product. The opposition has argued that soy bean oil yields a product which is too viscid, unsuited to easy dilution, and which gelatinizes upon cooling in the absence of excess alkali, or when potassium hydroxide is used alone (4).

These claims led us to make a special brief study of soy bean oil. Seven samples of 125-cc. quantities of Compound Cresol Solution, using varying amounts and mixtures of alkalies, were prepared. The formulas are given in Table II following. The official procedure was followed.

TABLE II.

Ingredients.	Formulas. 1.	2.	3.	4.	5.	6.	7.
Cresol	62.5 Gm.	62.5 Gm.	62.5 Gm.	62.5 Gm.	62.5 Gm.	62.5 Gm.	62.5 Gm.
Soy bean oil	37.5 Gm.	37.5 Gm.	37.5 Gm.	37.5 Gm.	37.5 Gm.	37.5 Gm.	37.5 Gm.
Potassium hydroxide	9 Gm.	10 Gm.	11 Gm.	12 Gm.	7 Gm.	5 Gm.	2 Gm.
Sodium hydroxide	.....	.....	.....	.....	2.13 Gm.	3.45 Gm.	5.51 Gm.
Alcohol	1.25 cc.	1.25 cc.	1.25 cc.	1.25 cc.	1.25 cc.	1.25 cc.	1.25 cc.
Water to make	125 cc.	125 cc.	125 cc.	125 cc.	125 cc.	125 cc.	125 cc.

OBSERVATIONS.

1. None of these preparations gelatinized upon being cooled to 15° C.

2. All dilutions, even up to 1–250 were clear except formula 1 which was deficient in alkali.
3. The use of mixed alkalies proved to be of no advantage.

The objections raised to the use of soy bean oil in this preparation were not supported by our observations.

The problem of gelatinization which has been reported by several workers has also been encountered by us but we were able to trace the difficulty, in every case, to the use of inferior grades of cresol. Good cresol of U. S. P. quality gave no trouble.

A PROPOSED NEW FORMULA FOR COMPOUND CRESOL SOLUTION.

While we have worked with the various other oils, previously named in this paper, after the manner described for soy bean oil, details of observations and results will be omitted here. Suffice it to say that all yielded Compound Cresol Solutions of very good appearance and quality. As a result the following formula and procedure for this preparation is proposed.

COMPOUND CRESOL SOLUTION.

Cresol	500 cc.
Oil (any fixed oil mentioned in this study)	300 Gm.
Potassium hydroxide	80 Gm.
Alcohol	10 cc.
Water, sufficient to make	1000 cc.

Procedure.—Put the potassium hydroxide into 80 cc. of water. When solution is about three-fourths complete, add the alcohol and stir until solution is effected. Add this solution to the oil which has been previously warmed to about 60° upon a water-bath, and stir gently. When saponification is complete, as shown by testing with water, in the usual way, or by appearance, add the cresol, in small portions, with stirring. Finally, remove from the water-bath, cool and adjust the volume to 1000 cc. with distilled water.

The new formula has proved to be a great time saver. We were able to complete the preparation easily, within fifteen minutes which is much less time than the average person takes to prepare the official formula. For this reason also the losses and changes due to continued heating are minimized. Students in manufacturing pharmacy were able to compound this formula with ease and success.

SURFACE TENSION OF COMPOUND CRESOL SOLUTIONS.

The Committee of Revision of the U. S. Pharmacopœia is interested in setting up dependable standards for its preparations. With respect to Compound Cresol Solution there is considerable interest in surface tension specifications for it. In Table III, on page 970, are the relative surface tension measurements of two different dilutions of eight samples of cresol solution. The samples are the same as those given in Table I.

The dilutions studied were 0.5% and 5% by volume. These were selected because they are near those dilutions commonly employed in using this product. They were made up with quantitative procedure. The measurements were made by means of a Cenco-du Noüy Precision Tensiometer. The instrument was carefully checked and calibrated in accordance with the instructions accompanying it (5).

TABLE III.

Compound Cresol Solution.

Sample No.	0.5% Solutions. Observed S. T.	0.5% Solutions. Temperature.	5% Solutions. Observed S. T.	5% Solutions. Temperature.
19	30.33	28.0 degrees	34.60	28.5 degrees
35	31.17	28.0 degrees	35.40	29.5 degrees
36	29.75	28.0 degrees	35.12	29.5 degrees
37	30.19	28.0 degrees	34.87	29.5 degrees
38	30.50	28.0 degrees	35.33	29.5 degrees
39	29.92	28.1 degrees	35.27	29.5 degrees
41	30.72	30.0 degrees	34.92	30.7 degrees
42	30.47	30.4 degrees	34.26	30.8 degrees

The observed surface tension readings are in dynes per centimeter and are given as relative values only. They are the averages of several measurements upon each of the dilutions.

In conclusion we wish to suggest that it is our belief that a solution so well known and widely used as is Compound Cresol Solution deserves to be made with considerable exactness. This can be done, by using high-grade chemicals, and refined technique. Reasonable standards for purity of the finished product could then be worked out.

REFERENCES.

(1) *Chem.-Ztg.*, 12, 186; through *Archiv f. Pharmacie*, 226, 217 (1888).

(2) "Bull. Subcommittee 12, U. S. P. X," pages 9–10.

(3) Ewe, George, Proc. Penna. Pharm. Assoc., 41, 166 (1918); through YEAR BOOK, A. PH. A., 7, 206 (1918).

(4) "Bull. Subcommittee 12, U. S. P. X," pages 31 and 107.

(5) The Ring Method for Surface and Interfacial Tensions, "Bull. 101, pages 15 and 18, Central Scientific Co."

THE HOSPITAL AND THE PHARMACIST.*

BY H. C. MCALLISTER.[1]

With the evolution of hospital care and group hospitalization in this country, it has become necessary for the institutions to give more efficient service at a lower cost to the patient than was formerly the case. This is true from a professional as well as an economical point of view. Many institutions, especially those doing some non-profitable work, find it difficult to meet the economic demands which are being made of them at present. It is with these conditions in mind that the following observations are recorded. It is believed that they will very probably apply to a majority of the hospitals of the Southeast, and may suggest a method of remedying some of the conditions met in dispensing medication.

Many of the smaller hospitals are still operating with a "Drug Room" method of dispensing under supervision of a graduate nurse, who has had no particular training in this work. She is assisted by student nurses who refill supplies or stock preparations kept on the wards, as well as compounding the simpler prescriptions written by the Visiting Staff. The prescriptions which are too complicated to be filled by the nurses are sent to an outside pharmacy. This system obviously has a few advantages:

* Section on Practical Pharmacy and Dispensing, A. PH. A., Portland meeting, 1935.

[1] Pharmacist, Watts Hospital, Durham, North Carolina.

(1) Supplies can be obtained at any hour of the day or night.
(2) The operating personnel is practically no expense to the hospital.

The disadvantages are:

(1) Prescriptions are filled by unqualified persons with a great risk to the patient's welfare and the hospital's reputation. This is necessarily true where untrained, immature persons are allowed to refill stocks of potent drugs and compound prescriptions of a similar nature.
(2) Supplies are often allowed to become exhausted due to lack of foresight on the part of student nurses, whose duty it is to keep up the want list. This impairs the service of the hospital greatly.
(3) The students are usually rotated every four to six weeks so that when a student becomes proficient enough to manage the system she is replaced by a new student.
(4) Such a method is very expensive for the quality of service obtained. The handicaps of such a routine could be enumerated in great detail.

The first suggestion is, of course, the employment of a pharmacist. The type and size of the hospital must be considered before any definite decision might be made that it can support a pharmacist. Some comparative information may be gained from the experience of an institution that has had the services of a pharmacist for one year. The rate dcapacity of this institution is 225 beds, and it has an average of from 125 to 150 patients per day. This is slightly larger than most of the hospitals operating without a pharmacist but it can be easily seen from the following outline that smaller institutions cannot only afford but profit by the services of one trained in the art of manufacturing and dispensing.

As an experiment this hospital employed a pharmacist who relieved the nurses of all of their duties connected with the dispensing of drugs. The duties consisted of refilling such stocks as were kept on the wards, filling prescriptions, ordering drugs and the preparations of intravenous solutions. Under the system then being employed the plan proved to be very time-consuming. The average number of patients at that time was about 135 per day and the attending physicians wrote special prescriptions on their morning and evening visits. Many patients were medical cases and the number of special prescriptions, averaging between thirty-five and forty per day, was disturbing. Due to these special prescriptions valuable time was consumed with the medications of a comparatively few patients.

The first step to eliminate this variety of prescribing was to compile a formulary. A list was prepared from the most useful prescriptions employed by the Visiting Staff including some preparations from the U. S. Pharmacopœia, the National Formulary and the Recipe Book. Special efforts were made to include those preparations which were counterparts of certain popular proprietary preparations. The list was presented to the staff for their consideration, correction and revision. Promotion of these formulary preparations was done when the members of the staff called at the Pharmacy for information about other preparations. In order to accomplish this purpose, tact must be exercised in order not to antagonize the physicians in attempting to substitute official preparations for proprietary remedies; one or two suggestions should be made at a time. In this manner a splendid spirit of coöperation can be established between the physician and the pharmacist. Some preparations worked out by the pharmacist for the particular needs of the hospital proved to be of special interest to the staff. This interest was further stimulated at staff meetings which are held once a month. Papers are read at these meetings

concerning the new preparations to be added to the formulary. Usually two or three preparations of the same nature are presented at each meeting and the merits and demerits of each are discussed. This serves to acquaint the physician with the particular item under discussion. Only basic drugs or preparations were submitted at these meetings. After the formulary had been in use for six months the number of special prescriptions was reduced to ten or fifteen a day. This allowed several hours of extra time which could be devoted to manufacturing, replacing supplies, studying, etc. It also saved much medication since special prescriptions when returned from the wards are discarded.

Shortly after the formulary was introduced the hospital adopted a flat-rate charge. Included in the flat-rate a definite sum was charged for the room and ordinary drugs, dressings, X-rays, laboratory work, etc. The term ordinary drugs was construed to mean drugs contained in the formulary. This proved to be most successful, since the physicians, interested in keeping the cost of hospitalization as low as possible for the patient, would use stock preparations when the basic ingredients of which were analogous to those of proprietary preparations. The medication to the charity patients was limited to stock preparations as far as it was possible. On several occasions it was found that the formulary was too limited in its scope and additions were made.

After using the list for some months it was found to contain some preparations for which there were no calls. These had found their way into the list because of their popularity elsewhere. This would indicate that it is necessary to compile an individual list for the particular needs of the institution.

Records were kept including (1) the number of times the "special preparations" were called for; *i. e.*, those preparations not included in the U. S. P. or N. F. but those that had been used in the hospital or in other institutions; (2) the name of the doctor prescribing these preparations. If the frequency of prescribing a certain preparation was below a definite figure in a justified period of time the attention of the physician ordering it was called to a similar preparation, which was contained in the formulary. In this way it was possible to eliminate the rarely used preparations, and further standardize the prescribing. There are certain types of medication for which the indications for use are seldom. Consideration must be given to this type of medication lest it be deleted without warrant, due to its infrequency of use and to overlook this fact will defeat the purpose of much hard work.

Some idea as to the amount saved in stabilizing the prescribing and by careful buying may be gained from the following:

	1933.	1934.
Cost per patient day for drugs	$0.1421	$0.1138
Cost per patient day for misc.	0.0304	0.0151
Total cost per patient day for Pharmacy	$0.1725	$0.1289

If the cost of the pharmacy for 1934 is figured on the basis of the cost per day for 1933, a saving of 26.43% on operation is noted. A comparison of the inventory of the two years adds to the total potential savings, since that of 1934 was about 50% over the inventory of the preceding year. The cost per patient day considering this increase in inventory is reduced to $0.1186 which indicates a total potential saving to the institution of 31.18%.

The question of salaries arises in figuring the total cost of operating the pharmacy. Under the old system one-half of the graduate nurse's salary was included in the cost of maintaining the pharmacy and the remainder was charged to nursing service. Under the new system, the entire salary of the pharmacist, as well as that of the employee who did cleaning, etc., was charged to the Pharmacy. The salary paid was based on the average paid in the community, and included full maintenance in the institution. The hours spent in work were shorter than those of other pharmacists in the neighborhood.

It is believed that these conditions will apply in varying degrees to every institution averaging over fifty patients per day, and that such institutions can well afford the employment of a pharmacist for the following reasons:

(1) Nurses are relieved to do nursing duties.
(2) Closer coöperation between the institution and the doctor can be secured.
(3) Dispensing is standardized and the welfare of the patient as well as the reputation of the hospital is protected.
(4) A pharmacist can operate the pharmacy at a lower cost (including salaries) than can a person untrained in the art of dispensing.

THE VISIBLE PRESCRIPTION DEPARTMENT.*

BY GEORGE W. FIERO.[1]

Probably the most modern development in retail pharmacy is the so-called "open front" or visible prescription department. Not that the idea is particularly new (Horton & Converse, Los Angeles, have had a completely visible prescription department since 1920), but it is now becoming quite popular. It is no doubt a step in the right direction, since it emphasizes the professional nature of the pharmacist; however, one should be sure of his step before making such a radical change.

Numerous articles have appeared in the drug journals praising the visible prescription department. Some pharmacists have placed their prescription department in the window so that it is visible from the street (1), others have a completely visible prescription department within the store (2) and others have a prescription department wherein the actual compounding of prescriptions is not completely visible (3).

Silsby (4) points out that the physicians he interviewed were unanimous in their disapproval of a prescription department in which the patient could see the actual compounding. It is important that the pharmacist should have a good professional relationship with the physician; therefore, his opinion of this type of prescription department should be quite important. In order to determine this opinion, a questionnaire was mailed to one hundred physicians. The names of these physicians were not merely taken from a directory, but were obtained from several active prescription pharmacists (both open and concealed prescription departments) in various parts of Buffalo. The list included the physicians who wrote the most prescriptions. The result of the survey is as follows:

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* Section on Commercial Interests, A. PH. A., Portland meeting, 1935.

[1] University of Buffalo, School of Pharmacy.

Number of returns, 40, 40%
Favoring visible department, 14, 35%.
Not favoring visible department, 36, 65%.

Among the reasons given by those favoring a visible prescription department were: "It will give an excuse for a general merchandise store to call itself 'Prescription Pharmacy,' anything which emphasizes the professional side of pharmacy is favorable; it raises the standard of the entire profession; it is not only educational, but shows that the pharmacist is a skilled professional man. The customers can see the care, time and skill which the pharmacist devotes in preparing a prescription; it will promote a greater degree of confidence and respect for the pharmacist. They can see that the prescription is not all water and they will be satisfied with the price charged. It will dispel the secrecy of a prescription; there is nothing which a pharmacist has to hide. It will incline the pharmacist to make up fresh solutions, rather than merely pour them from a stock bottle. The pharmacist must keep the prescription department clean and orderly."

Among reasons given by those not favoring a visible department were: "If a simple drug is prescribed, the patient, seeing it compounded, will feel that nothing is being done and will lose confidence in his physician; seeing the prescription compounded will create distrust and loss of confidence in the physician. It would be disconcerting to the pharmacist, make him nervous and take his attention from his work; it would make the patient apprehensive and confused; seeing poison labels, narcotics, etc., would cause fearfulness. The laity is unable to judge the ability of a pharmacist, as they know nothing of compounding; some prescriptions require consultation with the physician. In some cases (*e. g.*, solution of potassium iodide) the compounding is not in accord with the price; the public may lose confidence, if the pharmacist merely pours from one bottle to another, or, if he merely replaces the proprietary label with his own. Hand-filling of capsules and pills is not always helpful; patients know too much about drugs now; they endeavor to read their prescriptions and reading a proprietary label may lead to self medication. It is unwise to permit some patients to know what goes into the prescription; patients, seeing what goes into the prescription, may get a wrong idea of their ailments—if they see a bromide, they may arrive at a false conclusion; for this reason many physicians dispense some medicines. The department should always be open for inspection, but not visible. The patient may conclude from a prescription containing a proprietary preparation as a vehicle that he is getting a 'patent medicine.' "

The results of this survey would indicate that the physicians are not in favor of an open front prescription department in which the actual compounding may be observed. Probably a more satisfactory arrangement would be to have a prescription department with the actual compounding not entirely visible to the patient.

REFERENCES.

(1) Fay, L. C., *American Druggist*, May, page 66 (1935).

(2) Philip, W. Bruce, JOUR. A. PH. A., 24, 224 (1935); Brooks, H. A., *Druggists Circular*, May, page 13 (1934); Milner, Louis, *Ibid.*, September, page 16 (1934).

(3) McNulty, W. J., *Ibid.*, November, page 15 (1934); Moser, T. A., *Ibid.*, March, page 14 (1934).

(4) Silsby, J. N., JOUR. A. PH. A., 24, 134 (1935).

A HISTORY OF DENTIFRICES.*[1]

BY MARTHA E. FOULK AND ELIZABETH PICKERING.

The history of dentifrices is a striking example of the persistent marketing and use of preparations containing substances known by the medical profession to be harmful. The literature abounds in advertisements lauding dentifrices, and in medical criticisms of their ingredients. It is true that the most dangerous, for example, sulphuric acid for whitening the teeth and powdered glass as a powder, have fallen into disuse. Dentifrices constitute such a substantial proportion of the toilet preparations sold by pharmacists, and the latter, as well as the general public, are to-day presented with such a multiplicity of conflicting statements regarding the various market products that survey of the ingredients used in previous centuries may be of interest.

The Council on Dental Therapeutics defines dentifrices as preparations (pastes, powders and liquids) which aid in the removal of débris from tooth surfaces. From almost the earliest recorded writings on the subject, dentifrices have taken these three physical forms. Such preparations were first used chiefly to whiten the teeth, that is to beautify, but even as early as the middle of the first century Damocrates, a Greek physician, considered cleanliness the indispensable condition for avoiding disease of the teeth and gums. In any case the covering or removal of unwholesome breath was undoubtedly an important object as practically all formulas included one or more perfumes or deodorant materials.

Powders were composed of a great variety of substances, usually insoluble and often abrasive or astringent in character. In the 19th century insoluble powders were considered objectionable because they tended "to accumulate in the space formed by the fold of the gum and the neck of the tooth, and thus present a colored circle." To hide this, many tooth powders were colored red with bole Armenian.

Pastes as made then were of the same fundamental composition as powders but altered by the addition of a gum or a "pasty" substance, or often by addition of a liquid such as honey, and were unstable. It was not until early in the 20th century that the modern stable tooth paste or dental cream, of very much more complex constitution, was produced.

Mouth washes were sometimes of very simple nature, such as wine, asses' milk, etc., but more frequently were composed of very many substances and thus recall the "shotgun" remedies of the early ages. The active ingredients appear to be without exception acidic or astringent. These preparations were often claimed to be effective in "strengthening" the teeth and were, therefore, probably also used in the treatment of diseases of the gums.

Throughout the Middle Ages these various forms of dentifrices changed but little, and their ingredients were usually of indefinite composition and often of doubtful efficacy, or injurious. A partial list of ingredients is as follows:

Magistery of Pearls, Dragon's Blood, mastik, myrrh, pineapple, flowers of pomegranates, spring-water, gum of guaiac, Peruvian balsam, aqua vulneraria, cinnamon water, spirit of cochlearia, powdered crab's eyes, orris root, cuttlefish bone, burnt roots of birthwart, white salts, honey,

* Section on Historical Pharmacy, Portland meeting, 1935.

[1] Library, E. R. Squibb & Sons, Brooklyn, N. Y.

burnt land snails, unwashed wool burnt with salt, sal ammoniac, costus, pellitory, pepper, emery, talcum, pumice, alabaster stone, coral powder, burnt purple shell or ashes of the murex, burnt trumpet wheels, pennyroyal, sage seed, Saint John's bread, gall-nuts, ashes and powder of stag's horn, ashes of the heel of an ox, and of the feet of a goat, goat's milk, burnt eggshells, salt, powdered skin of the radish, asses' milk, alum, cedria, burnt figs, burnt gypsum, verdigris, vinegar wine, meerschaum, nitre, burnt orris root, aristolochia and reeds, moschata, cubeb, juniper seeds, root of cyperus, rosemary leaves, cream of tartar, armenian bole.

During the 18th and 19th centuries a greater variety of definite chemical compounds were incorporated in these forms of dentifrices. Also, in 1868, there appeared a "new and improved form of tooth powder," the tooth tablet. This was supplied in the form of a cake from which one tablet at a time, sufficient for one brushing, could be broken. Tooth soaps, made by adding about one-third by volume of powdered soap to an ordinary tooth powder, had their vogue toward the end of the 19th century. At this time, as a result of the search for a means of preventing dental decay and bad breath, the trend toward dentifrices and mouth washes having antiseptic properties developed.

It is our purpose in the following, so far as is possible, to classify early dentifrice ingredients according to their mode of action, and to show how the members of those classes varied from antiquity up to the end of the 19th century.

The use of abrasives is as old as dentifrices themselves. Chemically, abrasives have consisted usually of phosphates, carbonates, silicates and carbon but the form and sources of these compounds have varied greatly.

Ashes obtained by calcining bones or portions of animals were much used for several centuries. One of the favorites was the ash obtained by burning the head of a hare, mentioned alike by Hippocrates, Pliny and others. At times this was combined with the ashes of mice and substituted by the ashes of the heel bone of an ox, the teeth of a dog, stag's horn, etc. Ashes from such sources doubtless consisted chiefly of tricalcium phosphate, to-day considered too highly abrasive for use.

Probably the most effective abrasive substance, which appears to have been used but little, was the "very white glass, similar to crystal, powdered and mixed with spikenard," which Scribonius Largus, physician to Emperor Claudius, recommended. Pumice was likewise a constituent of the 14th-century powders of Gaddesden and of de Chauliac mentioned above. It was condemned as harmful by Berdmore in 1769 and by James in 1814, but it appeared as a constituent of a dentifrice marketed in this country as late as 1879, which was moreover claimed harmless by its maker. Ashes of vegetable products, mentioned below, would be like glass and pumice, of silicious character.

Vegetable substances that were "burnt" were used as abrasives in ancient times. Galen (131 A. D.) advised that teeth be rubbed with dried figs burnt and pounded with spikenard and honey. Charcoal or ashes of other vegetable products such as wood, tobacco, cigars, bread, etc., were frequently used during the 19th century and carbon or soot in admixture with salt and snuff was much used. Charcoal from such sources was usually thought harmful, but a dentifrice consisting of it and quinine (2:1) appeared in the French Pharmacopœia of 1866. Because of its chemical identity it is pertinent to note in this connection that Aristotle considered the diamond dangerous to keep in the mouth as it would inevitably crack the teeth. It is doubtful if he referred to this as a mode of cleaning the teeth.

Calcium carbonate in its several forms has been continuously used as a dentifrice from very early times, on account of its mild abrasive action and its value as an antacid. Hippocrates (430–377 B. C.) discusses the use of powdered marble or white stone; Pliny, burnt eggshells; de Chauliac (1368 A. D.), powdered sea shells.

Powdered cuttlefish bone, which consists chiefly of calcium carbonate, was an ingredient of a powder recommended by Gaddesden of Oxford, in the 14th century, by Guy de Chauliac (1300–1368), by Anton Nuck (1650–1692) and later by Ruspini in 1750. The French Pharmacopœia

in 1850 contained a dentifrice recommended by Canton containing cuttlefish bone and Sir Edwin Saunders, Court dentist to Queen Victoria in 1851, also recommended one containing it. Powders for general use, used in London in 1872, contained cuttlefish bone and small amounts of it may still be constituents of them to-day.

Seventeenth-century dentifrices often contained powdered red coral, as did the dentifrice included in the French Pharmacopœia of 1850.

Thereafter chalk was usually substituted and was frequently used alone. It was recommended by John Greenwood, dentist to George Washington, who wrote him as follows: "If your teeth grow black, take some chalk or a pine or cedar stick; it will rub off." In Philadelphia in 1784, when tooth brushes were not known, people rubbed their teeth with a chalk rag. In 1842 the English used a dentifrice consisting mostly of white chalk and the largest constituent of Dr. Bridge's tooth powder used in 1854 in Brooklyn was prepared chalk. Equal proportions of prepared chalk and orris root made a good dentifrice (1854). Chalk was the main constituent of Dr. Chapin Harris' dentifrice (1850), Sir Edwin Saunders', Dr. Brown's (1867) and several powders used in London in 1872. Further references to this ingredient are unnecessary—it is the most extensively used abrasive in present-day dentifrices.

Salt was used by the Chinese, the Greeks and the Romans in dentifrices, and was mentioned by Paul of Ægina. Later Avicenna (980–1037 A. D.), Guy de Chauliac and Giovanni of Arcole included salt in their dentifrices. Table salt along with other saline substances was considered undesirable in dentifrices in 1814 and again in 1847. In 1902, however, Greve gave two formulas for dentifrices, each of which contained 70 parts of a saturated solution of sodium chloride and today sodium chloride is still recommended by some for regular use.

Toward the end of the 18th century, orris root was used extensively. Ruspini mentions it in 1750. It continued to be a constituent of dentifrices through the 19th century and was present in Dr. Bridge's tooth powder (1854), Dr. Chapin Harris' dentifrice used in Baltimore in 1850, Sir Edwin Saunders' powder and Dr. Brown's powder (1867). As late as 1898, Dr. Willoughby D. Miller, an American dentist who practiced in Germany, recommended a tooth powder containing pulverized root of orris. It does not now appear to be extensively used, but appears in some formulas.

Reviewing briefly the tendencies of change in this field, it will be seen that in ancient times very abrasive substances were used—such as silicates, tricalcium phosphates, etc., and that their dangers were likewise very early recognized.

During the 11th century, Avicenna (980–1037 A. D.) in his book "The Canon" said that hard tooth powders injured the dental substance and must be avoided. In 1769, Berdmore warned that dentifrices that whitened the teeth by mechanical grinding were always composed of pumice, emery or some other cutting powder and were extremely pernicious, as they destroyed the enamel. However, when theories about the teeth changed, advice about the use of abrasives changed. In 1782 when many believed that the enamel of the teeth could be regenerated and it was of no consequence that it be worn away by the use of abrasives, a renowned surgeon, Theden, recommended the use of them.

After the excessive use of abrasives in dentifrices during the first part of the 19th century, they were condemned strongly toward the end as being the cause of decay and irritation. This was probably due to some extent to the work of James, who in 1814 experimented with abrasives by placing teeth in a vice and rubbing them with powders containing coral, pumice, emery, etc. He found that one hour's application of them with a brush removed the enamel from the tooth. He stated his results thus:

"From this fact we may ascertain pretty nearly the time required for the destruction of enamel under the daily use of powder. Suppose such dentifrice be used for 10 seconds each day; by this calculation, we see it requires but one year's perseverance in its use to ruin the teeth."

Bell considered that frequently the cause of dental decay was the abrasion of the enamel produced by coarse, gritty materials in tooth powders. Burchardt (1898) also discussed the irritant effects of abrasives such as charcoal and pumice and recommended the use of precipitated chalk or of magnesium carbonate or hydrate.

Because the original purpose of dentifrices was to beautify, there were, among the earliest used preparations, many for the whitening of teeth by chemical means. Some of these were of unknown and indefinite composition, as for example, the excrement of the bat used by the Chinese

in a powder. The Emperor Huang-Ti, called the founder of Chinese medicine, who lived from 2698–2598 B. C., described two powders for whitening teeth, both of which contained musk.

The majority of whitening agents used have been acid in character. One of the most harmless used in early times was vinegar—mentioned by Hippocrates (460–377 B. C.) and subsequently by others. From Strabo we learn that the Cantabri and other peoples of Spain used to clean their teeth with old urine which was kept for the purpose in suitable cisterns.

To Lazare Riviere (1589–1655), professor at the University of Montpelier, goes the doubtful credit of first suggesting sulphuric acid for this purpose. "If the teeth be very dirty, sulphuric acid might be used pure, otherwise one mixed it with mel rosatum or with water." The present-day whitening agents which consist of mineral acids such as hydrochloric, cannot, therefore, be considered original or unique.

After such treatment it is not strange that toward the end of the 18th century acids fell into disrepute as ingredients of dentifrices. Among the critics were Thomas Berdmore (1769), dentist to George III, and James of Boston (1814), both of whom stated in no uncertain terms that whitening dentifrices, without exception, owed their action to the presence of acid by virtue of which they destroyed as well as cleaned the enamel.

Tartaric acid, first mentioned as an ingredient of dentifrices by Nuck (1650–1692) was later replaced by Ruspini (1750) by the less acidic potassium bitartrate, cream of tartar. This was an ingredient of a dentifrice included in the French Pharmacopœia of 1850, and was present with an equal weight of powdered lactose in the acid dentifrice given in the same pharmacopœia of 1866. With respect to the earlier formula, the statement appears that this salt may ultimately injure the enamel.

Although it was well recognized that its continued use would injure the teeth, chloride of lime appeared in dentifrices of this period and was recommended, in a mixture with 2 parts of powdered red coral, for brushing yellow teeth. It was considered to have disinfectant and deodorizing properties.

Toward the end of the 19th century, phenol was recommended by Frey as an ingredient of a dentifrice. Benzoic acid was recommended by Miller in a dentifrice in 1898, tannic and benzoic acids and boro-benzoic acid by Greve in 1902.

Ancient dentifrices, particularly washes, contained astringent substances and these were also sometimes included in powders. Alum was one of the earliest used of such substances and was mentioned by Paul of Ægina (625–290 A. D.), by Scribonium Largus who recommended it rubbed on the teeth three times a month and by Rhazes (850–923) as a constituent of a cement to stop tooth decay. It continued to be an ingredient of many dentifrices until late in the 19th century. Myrrh was used for the same purpose during ancient times and in the middle ages. Other astringents such as camphor, tincture of rhatany and quinine sulphate came into use in the 19th century. The last two still appear in formulas.

Calcium carbonate as chalk was first used for its abrasive action but by the middle of the 19th century its value as a neutralizer of mouth acids was recognized. For this purpose it was sometimes allowed to remain on the teeth over night.

Blondeau, a pharmacist, is given the credit for introducing alkaline salts in dentifrices before 1836. A dentifrice of magnesium subcarbonate in combination with cocoa butter appeared in France in 1847, and preparations containing magnesia and magnesium carbonate, shortly after. A suspension of magnesium hydroxide was recommended as an antacid in 1898.

Another alkaline salt recommended at this time was sodium bicarbonate which is also to some extent still in use in antacid dentifrices.

Soap came into use in the 19th century and has since been an important ingredient of creams and the subject of much controversy regarding its effects on the gums.

It must be recognized that the application of dentrifrices at the present time is far different than in previous centuries. Although the relationship of cleanliness to tooth preservation was early recognized and Giovanni in 1484 recommended cleaning of the teeth after every meal, this practice was certainly not general. Dental education among laymen and the general advance of hygienic knowledge has resulted in a great increase in care of teeth which are now brushed daily or

oftener by a large proportion of the population. The heroic treatment given by many of the older dentrifrices was possible only because they were applied at infrequent intervals. Along with the change in frequency and mode of application have developed the modern dental creams and powders, better adapted by physical form and the character of their substituents to produce and maintain dental hygiene without injurious effects on the teeth or gums. These, it is true, contain in some instances the very abrasive and acid substances mentioned above but usually only when the product is to be used in certain special conditions and with the advice of a dentist.

During the first third of the 20th century the relative importance of the various types of dentifrices has undergone considerable change. Liquids or solutions have been sharply differentiated into those intended to whiten the teeth and into the antiseptic mouth washes. The first class, as always, was uniformly acid. Investigations have shown that many of these contain the mineral acids, hydrochloric and sulphuric, and are distinctly harmful to the teeth. Somewhat less objectionable are those which contain the organic or so-called fruit acids.

Mouth washes containing various antiseptic ingredients have been extensively advertised and sold but it is now recognized that only extremely active disinfectants can be expected to have any action on the mouth bacteria under the conditions of use. These preparations, however, continue popular for the purpose of improving the breath and removing that bad taste.

The modern toothpaste or cream, welcomed on account of its convenience, palatability and stability, rapidly became a best seller. The first preparations of this type contained the more severe abrasives recommended at the time, such as tricalcium phosphate. Other abrasives which have been considered are magnesium phosphates, calcium fluoride, barium sulphate, silica, calcium and magnesium sulphates, etc. These and many others have been investigated and the majority abandoned for various reasons. Experience has shown the consumer that extremely abrasive creams are not suitable for continued use. Generally chalk or precipitated calcium carbonate has satisfactory cleansing action without injurious effects on the enamel, and it is therefore to-day the polishing agent most frequently present in pastes intended for general use, as opposed to the abrasive creams intended for prescription use.

A good polishing agent, but chiefly valuable as an antacid, magnesium hydroxide or milk of magnesia first appeared as an ingredient of pastes in products sold locally in Detroit and San Francisco and soon thereafter in a nationally advertised cream. The insolubility of this base gives to creams containing it the ability to neutralize mouth acidity without conferring on them the high alkalinity of the earlier alkaline creams. Magnesia dental creams now comprise a most popular type of dentifrice.

The scope of this paper does not permit the discussion of numerous ingredients in addition to those necessary for stability, used in creams. Attempts have been made to render these antiseptic by the addition of strong oxidizing agents, such as peroxides or other compounds inherently bactericidal. Recalling the use of chlorinated lime in the past, potassium chlorate was at one time an ingredient of a popular toothpaste. In 1931 Chilson still considered it a common ingredient of pastes. Disinfectants are now, however, infrequently added to pastes, except for the pur-

pose of stabilizing the paste, it having been recognized that they, like washes, can hardly be effective in the manner applied.

The tooth soaps common during the latter part of the 19th century declined in importance with the rise of the toothpastes and are now little in evidence. In spite of the extended controversy over its dangers and advantages, soap, however, has continued an important ingredient of dentifrices. Powders, so important during past centuries, became much less so after the development of pastes. It has been said that recently, especially during the last year, the sales of pastes have declined in favor of powders. According to a survey made by *American Perfumer*, however, sales of pastes still greatly predominate; the sales of powders in 1934 representing only about 8% of the total.

Modern dentifrices, in whatever physical form, are quite complex as compared to those of the 18th and 19th centuries, and indeed at times approach the complexity of those of the ancients. In contrast to them, the individual constituents of present dentifrices, particularly of creams, are as a rule necessary to the stability of the preparations.

The authors are indebted for the above facts to the books listed in the bibliography and to many others which contained no additional information.

REFERENCES.

Allen, Charles, "Curious Observations on the Teeth" (1687), Bale, London (Dental Reprints, No. 1).

Ambler, Henry L., "History of Dentistry in Cleveland, Ohio" (1911), Evangelical Association.

American Medical Association, *Lecture Memoranda*, "Dental Art in Ancient Times;" lecture delivered at A. M. A. meeting, Atlantic City, 1914, Burroughs, Wellcome Co., London.

Bell, Victor C., "Our Teeth: How to Take Care of Them" (1901). Young American Publishing Co.

Bell, Victor C., "Popular Essays upon the Care of the Teeth and Mouth" (1894).

Berdmore, Thomas, "A Treatise on the Disorders and Deformities of the Teeth and Gums" (1769), Exshaw, Dublin.

Bridge, M. K., "Budget of Receipts" (1854), Hogan.

Brown, J. P. H., "The Teeth: Their Health, Disease and Treatment" (1867).

Brown, Solyman, "An Infallible Method of Preventing Diseases of the Teeth, Mouth and Gums" (1839), Kelly, New York.

Bulkley, J. P., "Modern Dental Materia Medica, Pharmacology and Therapeutics" (1910), Robinson, London.

Burchard, Henry H., "Textbook of Dental Pathology and Therapeutics, including Pharmacology" (1898), Lea & Febiger, Philadelphia.

Canton, Alfred, "The Teeth, Their Preservation in Infancy, and Manhood to Old Age" (1851), Ballière, London.

Clark, Andrew, "Practical Directions for Preserving the Teeth" (1825), Knight and Lacy, London.

Desirabode, M., "Complete Elements of the Science and Art of the Dentist," 2nd Ed. Translated from the French (1847). ("Am. Library of Dental Science," Vol. 7), Am. Soc. of Dental Surgeons, Baltimore.

Greve, Christian H., "Prevention of the Diseases of the Teeth and Mouth," in "The Prevention of Disease" (1902), Constable Co., Westminster.

Guerini, Vincenzo, "A History of Dentistry" (1909), Lea & Febiger, Philadelphia.

James, Benjamin, "A Treatise on the Management of the Teeth" (1814), Callender.

Kanner, Leo, "Folklore of the Teeth" (1928), Macmillan.

Kleinmann, Friedrich, "Recept Taschenbuch für Zahnärzte" (1874), Felix, Leipzig.

Meredith, L. P., "The Teeth and How to Save Them" (1872), Tegg, London.

Miller, Willoughby D., "Lehrbuch der Conservirenden Zahnheilkunde" (1898), G. Thieme, Leipzig.

Parsons, E., "Conversations on the Teeth" (1879).

Pereira, Jonathan, "Elements of Materia Medica and Therapeutics," 3rd Am. Ed.; Ed. by Joseph Carson (1852), 2 vols., Lea & Febiger, Philadelphia.

Prinz, Hermann, "A Historical Review of the Evolution of the Therapeutic Concept during the Last Hundred Years," *Dental Cosmos*, 76, 97 (1934), No. 1.

Prinz, Hermann, "Dental Materia Medica and Therapeutics" (1920), St. Louis, Mosby.

Robinson, James, "The Surgical, Mechanical and Medical Treatment of the Teeth" (1846), Webster, London.

Taylor, J. A., "History of Dentistry" (1922), Lea & Febiger, Philadelphia.

Thompson, T. D., "Facts for People Relating to the Teeth" (1854), Mussey.

Thomson, Nöel H., "Formulaire de Medicine et de Chirurgie Dentaires, Maladie et Hygiene de la Bouche et des Dents" (1895), Baillière, Paris.

Watson, John F., "Annals of Philadelphia and Pennsylvania in the Olden Times" (1909), Leary.

Wedgewood, J. J., "Progress of Dentistry and Oral Surgery," 4th Ed. (1885), Kimpton.

Weinberger, Bernhard Wolf, "Orthodontics: an Historical Review of Its Origin and Evolution" (1926), Mosby.

White, James W., Comp., "Dental Materia Medica;" appendix (1868), S. S. White, Philadelphia.

CALIFORNIA FAIR TRADE ACT.*

BY IRA J. DARLING, M.A., LL.B.[1,2]

The anti-trust law of California, passed in 1907, is popularly known as the Cartwright Act. In the act a trust is defined to include a combination to increase the price or prevent competition in the sale of merchandise or to fix any standard or figure, whereby its price to the public or consumer shall be controlled. (Stats. 1907, page 984, ch. 530.) Such a trust is forbidden and very severe penalties are prescribed.

Statistics are not readily available to show what attempts were made to enforce the California anti-trust law in the two years following its enactment, but it is doubtful whether it was ever sternly enforced in all its rigor.

In its original form the California anti-trust law absolutely forbade any kind of a price setting agreement. It was clearly based upon the economic theory that the general welfare would be promoted by free and unlimited competition. It was enacted at a time when it was believed that an industrial system saturated with competition would automatically result in well-equipped factories, an efficient system of distributing the manufactured products and room for an unlimited number of small retail outlets with an ever-increasing rate of turnover. The law of supply and demand was considered adequate to adjust prices. *Laissez-faire* was the slogan.

In some magical way the energetic California competition was to make it possible for all the retail outlets, the numerous small drug stores as well as the large ones, to have customers who had the purchasing power to maintain indefinitely a high rate of turnover with a healthy mark-up. Now these California customers were mainly people with pay envelopes, salary checks or those receiving incomes

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* AMERICAN PHARMACEUTICAL ASSOCIATION, Portland meeting, 1935.

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from rents or interest. The amount received by customers in wages, salaries, rent and interest was not equal in amount to the selling price of the articles offered for sale. It was not equal to the selling price, never has been, and the California Legislature, by the enactment of an anti-trust law could not make it equal. The amount received in wages, salaries, rent and interest not being equal to the total selling price of the products offered for sale, some of them, obviously, had to remain unsold, and there was "overproduction," or, to state it more accurately, there remained the lack of purchasing power.

Furthermore, the larger concerns who had reserves of capital and had access to favorable markets began cutting prices in order to get rid of their stock. The small stores, of course, had to cut prices likewise to meet the competition, but many stores, especially the small ones, could not afford to take the loss and failed.

When the California Legislature met in 1909 it was faced by the ever present and sorrowful fact that purchasing power did not equal selling price, and that good management and lusty competition had not succeeded in making it equal. At that session the Legislature decided to reverse some of its economic theories in order to try to solve the chronic problem that has driven sales managers to early graves while production managers have been able to take merited vacations. So, in 1909, there was adopted a sweeping amendment to the Cartwright act of doubtful constitutionality. In part the amendment provided ". . . No agreement, combination or association shall be deemed to be unlawful . . . the object and business of which are to conduct its operations at a *reasonable profit* or to market at a reasonable profit those products which cannot otherwise be so marketed. . ." (Stats. 1909, page 593, ch. 362.) In other words, if a contract sets a minimum resale price, and it merely assures a reasonable profit, and if there is no other way of selling the product at a reasonable profit, then the contract is lawful. But what did the Legislature mean by a "reasonable profit?" Similar words in a Colorado statute were held to be so vague as to be unconstitutional, in the opinion of the United States Supreme Court in 1927. (Cline *vs.* Frink Dairy Co., 274 U. S. 445, 47 Sup. Ct. Rep. 681.) However, in the eighteen years intervening, the constitutionality of the 1909 amendment was not questioned by the California courts.

If the "reasonable profit" amendment of 1909 was unconstitutional, then it is probable that the original anti-trust law remained in effect. However, the California courts construed the anti-trust law as though the amendment were valid so as to permit contracts for what was claimed to be a reasonable profit.

The anti-trust law of 1907, the "reasonable profit" amendment of 1909 and the several bulky volumes of fine-printed statutes since then had all failed to usher the hard working retail druggist of California into the golden land of eternal prosperity where red ink is unknown. In 1931 the rate of turnover was not what it should be; it was hard to maintain a respectable mark-up. Customers just didn't seem to buy enough goods at the proper prices. Sometimes it was hard to pay the rent. Many small stores resorted to bankruptcy and the bankrupt stock was bought up and sold by some of the inconsiderate chain stores at cut-throat prices, even below the wholesale price.

The Legislature sought to remedy this situation in 1931 by the passage of the Fair Trade Act (Stats. 1931, page 583, ch. 278), which definitely abandons the "reasonable profit" test, and makes resale contracts legal regardless of whether or

not the price named is one that will render the buyer or seller a reasonable profit, or more or less than a reasonable profit, or none at all. Such contracts need not be limited to forms of business that cannot otherwise be conducted at a profit. The California Fair Trade Act provides in part:

"No contract relating to the sale or resale of a commodity which bears, or the label or content of which bears, the trade-mark, brand, or name of the producer or owner of such commodity and which is in fair and open competition with commodities of the same general class produced by others shall be deemed in violation of any law of the State of California by reason of any of the following provisions which may be contained in such contract:

"1. That the buyer will not resell such commodity except at the price stipulated by the vendor.

"2. That the vendee or producer require in delivery to whom he may resell such commodity to agree that he will not, in turn, resell except at the price stipulated by such vendor or by such vendee.."

Perhaps the troubles of the retail merchant were over. Perhaps!

In spite of the Fair Trade Act of 1931, sad but stern history tells us that prosperity did not come to California in the two years following 1931. By the time the Legislature of 1933 met it was painfully evident that the Fair Trade Act had not ushered in an era of abundance. As far as the retailer was concerned prosperity was still "around the corner," and he had decided that the world was at least an octagon.

One trouble seemed to be that the contract signed by the manufacturer and retailer was binding on no one except the parties who signed it. There were many ways of evading the purpose of the Act.

A competitor of the person violating the contract could not take any action to enforce it. The contract could not be enforced by some one who had not signed it, unless it stated that it was made for the benefit of that person, and it could not be enforced *against* some one who had not signed it. It was simply a private arrangement between the contracting parties.

The California Legislature is very obliging. It never hesitates to correct the mistakes of earlier legislatures or to change its economic theories when necessity seems to demand it, provided, of course, that there is no powerful pressure-group with a well-organized lobby opposing the change.

The theory was advanced by the retail druggists' lobby and others that the Fair Trade Act needed some "teeth," that it should be made easier to wreak legal vengeance upon some one when a duly signed Fair Trade contract failed to get the desired results, that possibly the highway to retail prosperity could be made smooth by paving it with lawsuits!

In 1933 the Legislature amended the California Fair Trade Act by adding the following section:

"Section 1½. Wilfully and knowingly advertising, offering for sale or selling any commodity at less than the price stipulated in any contract entered into pursuant to the provision of section 1 of this act, whether the person so advertising, offering for sale or selling *is or is not a party to such contract*, is unfair competition and is actionable at the suit of *any person damaged thereby*." (Stats. 1933, page 793, ch. 260.)

Thus it is seen that the 1933 amendment to the Fair Trade Act authorizes an action to enforce a contract between a manufacturer or a wholesaler and the

retailer against anyone who "wilfully and knowingly" violates it, even though the party had not signed the contract. The person bringing the action need not be a person who has signed the contract, but may be any person damaged by the breach thereof. The amendment appears to declare that a private price fixing contract entered into between a manufacturer or wholesaler and a retailer may take on a status approaching that of a law binding upon every one else who knows about it.

The constitutionality of the 1933 amendment has not been definitely decided. There is no Federal decision or other state Supreme Court decision in point because there is no other statute similar to the California statute to be construed. The cases that have arisen in this state under the Act have not yet been decided by the California Supreme Court. One of these cases is now before the Court but no decision has been rendered. There have been trial court decisions upholding the amendment and decisions declaring it unconstitutional. Notice will be taken of three decisions in the trial courts.

Since there is no direct precedent for the 1933 amendment the courts are not in a position to follow an established precedent; moreover, it is impossible for the attorneys before a court to prove positively what the effect of the amendment would be, for the simple reason that the fact does not yet exist. If the court can decide the case on neither proof nor precedent, then it must theorize. If so, the decision will depend upon the economic theories of the particular judge or judges who hear the case.

In each of the California cases the plaintiff was a manufacturer or distributor who had signed a Fair Trade contract with various retailers. However, in each case the defendant was a retailer who had refused to sign one of plaintiff's contracts and was selling at a price lower than that named in plaintiff's contracts.

In the case of *Max Factor & Co. vs. Clarence G. Kunsman,*[1] decided in October 1933, by Judge Emmet H. Wilson of Los Angeles, it was held that the 1933 amendment violated both the California and the United States constitutions. The court considered the amendment an attempt to legislate under the police power, but held that the amendment had no reasonable and necessary connection with the public welfare. The court says,

> "The right of the owner to sell his property at a price satisfactory to himself 'is an inherent attribute of the property itself,' and is within the due process clause of the Fifth and Fourteenth amendments to the Constitution of the United States."

The court further states:

> "A legislative enactment undertaking to regulate useful business enterprises is subject to review by the courts with a view of determining whether it is a lawful exercise of the police power, or whether under the guise of police regulations there has been an unwarranted interference with the constitutional right to carry on a lawful business, to make contracts, or to use and enjoy property."

In summing up the case against the 1933 amendment the court says:

> "It necessarily follows that section 1½ of the Fair Trade Act is in violation of the Fifth and Fourteenth amendments to the Constitution of the United States, and in violation of the Constitution of California, in that it deprives persons of their property without due process of law and without compensation, it abridges the privileges and immunities of citizens, it deprives them of the full and free use of their property, it imposes an unlawful, unnecessary and unreasonable restraint

[1] See text of opinion, *The Los Angeles News*, October 21, 1933.

upon the alienation of property and upon contracts, and it is an unlawful interference with private business. It is not a valid exercise of the police power and it is not for the protection of the peace, health, safety, morals, or *welfare of the public.*" (*Italics mine.*)

This decision is a good expression of the older economic theories relating to property and contract rights. The court takes the view that the public welfare demands hands off from private property and non-interference with business competition, at least so far as the retailing of cosmetics is concerned.

In *Weco Products Company of California vs. Sunset Cut Rate Drug Co.*,[1] decided in January 1934, by another Judge of the Superior (trial) Court, the amendment was held constitutional. The court did not devote very much space in its opinion to the knotty problem of "public welfare," not approaching that indefinite theory nearer than to say, ". . . the legislative body is presumed to be guided by proper considerations of public policy. . . ." Most of the opinion is devoted to the argument that the amendment is valid on the theory that it was passed to protect the manufacturer or distributor, that is, to protect his system of contracts, good will, trademarks, etc. The defendants by their conduct were inducing other people who had signed contracts to break them.

Parties to a contract traditionally have been given some protection against third persons coming in and inducing the other person to break the contract. But never before has it been held that mere price cutting by the third party was the kind of conduct which would make him liable. However, in no other case decided on the theory of protecting contracts against the actions of third parties has there been a statute declaring price cutting unlawful. In this state under the Fair Trade Act if the defendant's actions are unlawful, they are unlawful because of the statute and not because the contracts are injured. Therefore it would seem that the court's reliance upon the legal theory that the plaintiff has a right of action because of an unlawful invasion of his contract is not sound. It cannot be logically advanced that the breaking of the contract because of fear of competition is an unlawful invasion of contract right on the part of the third party competitor, unless it can be held to be constitutional for the Legislature to give private contracts the status of law which cannot be broken.

In the Weco case the court in its opinion barely referred to the "public welfare," and made no reference to the welfare of the retailers.

This case would not be precedent for the constitutionality of that part of the Act which states that "anyone injured thereby" can sue.

If the Supreme Court should decide that the manufacturer has property rights remaining to him in trade-marked articles which he can protect against any price cutting then he, but not the retailers, would have a legal remedy.

The last decision to be particularly noticed in this paper is the case of *General Cigar Co. vs. The Drug Market*,[2] decided in the Superior Court, in September 1934. In holding the amendment constitutional the court said, "It is in evidence before me . . . that the underselling of branded and trade-marked articles has resulted in the bankruptcy of hundreds of small independent dealers, leaving in its wake unemployment and economic distress," and it "is a fair exercise of the police power

[1] See text of opinion, *West Coast Druggist*, February 1934, page 8.

[2] See text of opinion, *The Los Angeles Daily Journal*, September 28, 1934.

. . ." The court took the view that the amendment was enacted to aid the retailer directly, and indirectly to promote the public welfare.

The older view of police power was that it extended only to public *health, safety* and *morals*. The court in the General Cigar case takes the newer view that the police power extends also to some field, as yet poorly defined, that is sometimes termed "public welfare," and sometimes called "economic welfare, public convenience and general prosperity of the community." In support of the view that the police power extends to the economic sphere the court quotes at length from the case of *Nebbia vs. New York* (March 1934), 291 U. S. 502, 54 Sup. Ct. Rep. 505:

> "If the law-making body within its sphere of government concludes that conditions or practices in an industry make unrestricted competition an inadequate safeguard of the consumer's interests, produce waste harmful to the public, threaten ultimately to cut off the supply of a commodity needed by the public, or portend the destruction of the industry itself, appropriate statutes passed in an honest effort to correct the threatened consequences may not be set aside because the regulation adopted fixes prices reasonably deemed by the legislature to be fair to those engaged in the industry and to the consuming public."

The *Nebbia* case clearly shows that the police power now extends to economic affairs, but it must be noted that the prices in the *Nebbia* case were fixed by the government itself.

As an additional ground for upholding the 1933 amendment the court in the *General Cigar* case advances the following theory ". . . where the goods are well advertised and branded, a manufacturer has an interest, or concern, if you like, in those goods which are identified by his marks and advertisements." The court places great weight on the New Jersey case of *Robert H. Ingersoll & Bro. vs. Hahne & Co.*, 89 N. J. Eq. 332, 108 Atl. 128. New Jersey passed a statute making it unlawful to "discriminate against (a trade-mark) by depreciating its value," etc., except where the goods did not carry a notice forbidding such practice. The plaintiff marketed a popular brand of watch bearing a notice and trade-mark, the notice being construed by the court as a contract. The notice or contract provided that the retailer was licensed to use the *trade-mark*, etc., provided the watch were not sold for a price other than $1.35. The retailer could remove the notice and *trade-mark* and sell the watch at any price that he chose; but without removing the trade-mark and notice this particular defendant offered the watches for $1.00. The court held it unlawful for the defendant to do so, and held the New Jersey statute constitutional. But it is to be noted that the New Jersey contract did not set a price on the *article itself* as do the contracts authorized by the California statute. Possibly some courts would be inclined to distinguish between the two statutes.

It will be very interesting to read the opinion of the California Supreme Court, and ultimately an opinion from the United States Supreme Court.

The court says, in the *General Cigar* case, "It is a matter upon which only the opinions of the highest court in the state and nation can be of practical interest to the litigants, their counsel and the commercial world in general." In the meantime, we must be guided—and confused—by the decisions of the trial courts, and since these decisions are in direct conflict one with another, we can only guess what the law will ultimately prove to be.

Will a judicial opinion upholding the validity of the 1933 amendment to the Fair Trade Act solve the problem? At their best such contracts are very difficult

and expensive to enforce.[1] One user of Fair Trade contracts plaintively writes "... We cannot sue 200 or 300 retailers. Frankly, the legal expense is beyond our means..."[2]

Possibly, after all this legal travail, many retailers will place slight reliance on Fair Trade Acts, amendments, injunctions, voluminous briefs and learned but conflicting judicial decisions. We find editorial reference to the " . . universal complaint of Fair Trade manufacturers that retailers are not showing enough interest in the Act to return contracts, and the lack of support of Fair Trade items by retailers; the apparent divided opinion on the part of manufacturers regarding the advisability of refusing to sell retailers who do not sign Fair Trade contracts."[3]

There is no provision in the Fair Trade Act that the minimum retail price named in the contract shall be high enough to insure a profit to the retailer.

There is no requirement that products be sold to all retailers at the same price.

There are many types of disastrous competition that cannot be reached by Fair Trade legislation. It does not limit the *producing* units—factories, laboratories, etc., with duplicating machinery. It does not limit the number of *distributing* units with their duplication of facilities. Nor does it limit competition between substantially the same product under an unlimited number of trade names. It does not limit the number of competing retail stores, as new stores are permitted to open at any time regardless of the public need for such stores.

More sweeping legislation is needed to correct the difficulties confronting the retail druggist.

THE PLACE OF COMMERCIAL SUBJECTS IN THE PHARMACY CURRICULUM.*

BY NEAL B. BOWMAN.[1]

No one will deny the fact that there is an ever-increasing trend toward specialization in almost every field of endeavor. Therefore, it is not surprising to find that the drug business is concerned with various proposals concerning its possible reconstruction. This reconstruction was given impetus by the increase in course requirements and the demands brought about by changes in the business relations of the pharmacist, and the question suggests itself, "What is the place of commercial subjects in the pharmacy curriculum?"

Each teacher of commercial subjects, quite naturally with intellectual honesty, will champion his own subjects, feeling justified in so doing by virtue of the fact that he is the one charged with the responsibility of teaching those subjects.

Society is so constituted that every member of it, after he has passed his

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[1] Blumenfeld, Juliet, *Retail Trade Regulations and Their Constitutionality*, 22 California Law Review, page 86.

[2] L. B. Laboratories, Inc., "An Open Letter to the Druggists of California," *West Coast Druggist*, April 1935, page 17.

[3] *West Coast Druggist*, July 1934, page 12.

* Section on Commercial Interests, A. PH. A., Portland meeting, 1935.

[1] Assistant Professor of Economics and Commercial Pharmacy in the School of Pharmacy of Temple University, Philadelphia, Pa.

formative period, takes up a certain phase of its activity, which constitutes his vocation. Hence, one of the important needs of the individual is preparation to perform his vocational tasks efficiently, because they represent the largest part of his work in life. This preparation might come partly by placing the individual in his industrial environment at the same time that he is pursuing his studies. But of the higher vocations, like pharmacy, which demand the exercise of the highest powers of the mind, experience cannot be left wholly to the apprenticeship system, but rather should it require an extended period of special theoretical education.

Teachers of commercial subjects are faced with the very important problem of integrating and correlating the various commercial interests into a composite whole with such a synthesis of content as will develop the very best offering. The work offered should be designed to "bring education down to earth and make it vital in its application to living." Or, to put it differently, the subject matter should be so patterned as to vitalize practical education.

The difficulties of the problem have been augmented by a very definite realization of the fact that business itself moves so swiftly, and assumes such a multiplicity of forms, that the mere exigencies of curriculum planning make it very difficult to keep pace with business. These are rushing, tumultuous times. The tide of world affairs runs high; trifles and petty worries and hurries hem them in on every side. Never has there been a greater need for an understanding of business institutions, their functions and their influence on the social structure. Never before has there been such a need for building in the minds of those who will control business a consciousness of proper ethical business conduct as right now.

Add to this the further fact that students for whom the subjects are intended have changed. If the capacities and potentialities of the students have been carefully analyzed the teachers are faced with the realization that the average student has limitless ambitions—he is hungry and insatiable for life with its rich experiences and sensations. He has freshly awakened interests, all of which represent an influence that may no longer be denied.

The satisfactory departmentalization of subject content is also perplexing, for the most part. Those who are charged with the evaluation of subjects taught should be schooled in the relative usefulness and uselessness of certain subjects in terms of student needs. A critical analysis of college catalogs will disclose the fact that the commercial subjects now offered bear a very definite relationship to contemporary business requirements of the pharmacist. Were free choices manifested, some students would, in all probability, elect certain subjects in preference to others; or they would evaluate subjects in terms of personal likes and dislikes.

Carrying this idea a step further, there might be some students who, with measured dignity, assume that the subject of Advertising should find no place in the curriculum since they have been nurtured in the belief that it is unethical to promote one's activities. But the majority of the students are cognizant of the statement, "To the man who never heard of you, you don't exist." Professionally, a graduate might be the town's best pharmacist—commercially, he might own the town's less frequented place of business. Granting that some do know the pharmacist and his qualifications, the value of constantly keeping his name before the public is vouched for in the biblical exhortation, "A new King grew up who knew not Joseph." The subject of Advertising teaches one how to seek public favor, and how to hold it as

well as to win it. The old bromide—"the public will make a beaten path to your door" is still a workable theory.

Some students, steeped in tradition, might join forces with those who, because they are not gifted with an analytical mind, would voice their disapproval of any sort of Accounting on the grounds that it would never be necessary to know any of the principles and practices because they don't intend to spend their time "keeping books." Accounting forces one to face facts. It has disciplinary value—it trains in construction and exercise. It teaches self-reliance, necessitates truthfulness, encourages neatness, stimulates resourcefulness and develops self-control.

Many students share the opinion that Salesmanship cannot be taught. Salesmanship can be taught and from a broader point of view than merely that of preparing for the selling of goods. The thought can be emphasized that all persons are salesmen and that characteristics which constitute successful salesmanship are as applicable to the profession of pharmacy. Special attention can be given to the importance and development of character. Salesmanship has been defined as "Selling goods that won't come back to people who will come back" and the definition has just as much significance to selling of prescriptions and professional services.

The same influence which might cause a student to be intellectually uncongenial to the other subjects mentioned might condemn Merchandising on the basis of the subject being too broad and general to justify the time spent studying it. Years ago intensive merchandising was as unnecessary as it was unknown, but to-day, merchandising, or aggressive "store-keeping," as it is sometimes called, must be in tune with modern trade practices. To-day pharmacy is more than a profession, it includes a business of modern merchandising.

The drug store is now beginning to be a crystallization point of innumerable human wishes, wants, desires and needs. The modern pharmacy is a typically American institution which has evolved to meet these demands. With its varied activities, covering a multitude of services in addition to its primary health aspect, the American pharmacy has come to fill an integral function in our community life, which though it may overlap with that of other institutions in part, is nevertheless largely unique. Pharmacy to-day is competing with many trade outlets. The social evolution of the pharmacy offers an interesting commentary on modern civilization, and it could well be termed one of the most important nerve centers for up-to-date merchandising. To-day the pharmacist is forced to merchandise the front of his store as well as to professionalize the rear of it. He is forced to handle many items heretofore, perhaps, not in keeping with the policy of conducting a pharmacy and the pharmacy has become, in a few strides, "the greatest service station in the world"—an integral part of the distributive system of the community. No matter how it may alter in superficial form, the pharmacy, in all probability, will remain the best agency to minister to the many miscellaneous wants of both the sick and the well, young and old, rich and poor, all creeds, all colors, every day and all day. The pharmacist is really the purchasing agent for the community he serves. His interests are varied and his problems are multiple.

It seems idle to condemn the multifarious activities of the pharmacist of to-day, or to suggest a return to the old days when the pharmacist adhered to the strictly limited field of compounding and dispensing of prescriptions and proprietary remedies. Though such a move would enable a greater "professionalism" of the phar-

maceutical industry, in the limited sense of the term, it would also involve a decided social and economic loss on the part of the community.

Current changes in economic conditions indicate that current changes in business education are imminent. The subject matter and teaching techniques of the various courses in the commercial field should not be bookish, abstract and artificial. It is imperative that the work and methods of the class room parallel as far as possible the actual conditions of the business world of which the students are integral parts. Careful planning on the part of the teachers and whole-hearted cooperation on the part of business leaders will bring about the necessary revision. Business education must remain flexible, and subject to modification in the light of existing conditions in the community. It might be mentioned, at this point, that the writer is now engaged in a project which is designed to study practices in Commercial Pharmacy curricula in order to learn to what extent the Commercial Pharmacy curricula and courses are in conformity with the actual requirements of practicing pharmacists, as evidenced by personal interviews with employing pharmacists in selected and representative districts of Philadelphia and its environs.

The business teacher who has kept in touch with tendencies in the field is fully aware of a real need for general business education in the schools of pharmacy. He must not cling tenaciously to old ideas nor must he go to the other extreme and impulsively adopt each suggested innovation. The efficiency in knowledge of the subject matter must not only be tested but rather the ability to use and apply the underlying principles of the subjects of business as tools of learning and for shaping judgment in matters of everyday experience. Naturally an impelling and abiding interest in the commercial subjects must be created. Should not the commercial teachers hold the demands of business in as high esteem as the demands of the professions?

One cannot read the daily press or converse without meeting a situation which requires a background of business behavior. Because the whole social life is so interwoven with business activities, one needs an understanding of these activities and their effect on the social and political life in order to understand and interpret the happenings of contemporary living.

It is the opinion of the writer that the commercial subjects have a very definite place in the pharmacy curriculum and should not be mitigated in the least. He maintains the point of view that the main objective of commercial training is to augment, *not supplant*, the professional training of the student and thus better fit him for profitable employment after graduation. For surely, "They profit most who serve best."

"THE ASSAY OF ORGANIC MEDICINAL PREPARATIONS CONTAINING ARSENIC."*

Presenting a brief review of the available methods for the estimation of arsenic in organic compounds. The details of the various methods are classified for the purpose of making a comparative study of the analytical procedures. The tendency toward improved technique is noted, while the difficulties encountered in applying a number of details are also indicated. Suggestions are offered, on the basis of experimental data, with the idea of developing greater uniformity in a practical and dependable method for the assay of organic arsenicals, particularly those containing pentavalent arsenic.

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* Abstract of a paper before Scientific Section, A. PH. A., Portland meeting, 1935—by Edward J. Hughes.

THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

C. B. JORDAN—CHAIRMAN OF EXECUTIVE COMMITTEE, A. A. C. P., EDITOR OF THIS DEPARTMENT.

The paper by Professor Dunn adds valuable data to promote progress in teaching Botany and Pharmacognosy. Such information should be presented to Pharmacy students for their guidance, and guidance of students is important, especially with beginning students.—C. J. ZUFALL.

A STATISTICAL STUDY OF THE RECORDS OF THE SAME CLASS IN BOTANY AND PHARMACOGNOSY.

BY MARIN S. DUNN.*

We have always believed that a close relationship exists between the quality of student work in botany and that in pharmacognosy. However, we have lacked definite quantitative studies to support our view, and it was for the purpose of obtaining these that the following analysis was made, using the records of one class of one hundred and twelve students taking botany and pharmacognosy in successive years (1930–1931) (1931–1932). The final grade in botany represents the average of three or four examinations and two note-book inspections while that in pharmacognosy the averages of quiz grades, note-book and five examination grades.

From the crude scores of the same class in botany and pharmacognosy arranged in simple series, the cases have been regrouped for each examination, quiz and note-book into group series with an interval of five. Then from these, the central tendency as represented by the median, mean and mode, the first and third quartile points, the range of the first quarter, middle fifty per cent and fourth quarter, the quartile deviation and the standard deviation have been computed. Lastly, the correlation from simple series between the final grades in botany and those in pharmacognosy has been worked out using the Pearson formula.

$$\gamma = \frac{\Sigma xy}{\sqrt{\Sigma x^2 . \Sigma y^2}}$$

$$\text{P. E.} = \frac{.6745 \times (1 - r^2)}{\sqrt{N}}$$

The results are given in Tables I and II. (Turn to page 993.)

DISCUSSION.

Casual observation of Examinations I and II in botany would lead one to believe that the class contained many good and many poor pupils with a few average ones. As a matter of fact, as proved by their later records, the reverse is the case, there were a few extremely good pupils, a few extremely poor, and the rest average. Many students who were just above the passing grade of 70 in their examinations in theoretical botany and pharmacognosy were able to pull their final average to the

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eighty mark. The means in botany hugged the eighty mark except in Examination IV which was taken principally by those whose grades were low enough to make this examination compulsory. Often, students who barely passed botany found themselves continually in hot water in pharmacognosy. However, other students who were doubtful in botany but passing, and beginning their study of pharmacognosy found new interest and pulled themselves out of the danger zone.

The majority of the class, however, did about the same grade of work in pharmacognosy that they did in botany—some a little better and some a little worse.

In pharmacognosy, the first examination was poorly answered by many of the students; Examination II was a little better; Examinations III, IV and V showed continuous improvement with the peak reached in Examination V where 25 students made between 96 and 100, 30 between 91 and 95, 25 between 86 and 90. (Table I.) From a wide distribution of marks, the field became more and more limited, except in the range of the first quarter where the low grades of a few absolute failures lent themselves to a wide distribution. (Table II.) The mean of the final grades in pharmacognosy was 79.8; the measure of the spread or variability 9.8.

In the normal probability curve, 34% of the cases lie between the mean and $+1\sigma$, between $+1\sigma$ and $+2\sigma$ lie 14% of the cases, between $+2\sigma$ and $+3\sigma$, 2% of the cases. In other words if σ is the standard deviation and is measured from the mean, between -1σ and $+1\sigma$ lie about 68% of the cases, between -2σ and $+2\sigma$ lie about 95% of the cases, whereas only about .27 of 1% of the cases lie outside of $\pm 3\sigma$.

In our distribution curve in botany if we lay off on the base line distances of $\pm 1\sigma$, 2σ and 3σ from the mean, we find that 71% of the cases lie between -1σ and $+1\sigma$, and 98% between -2σ and $+2\sigma$. Only one case lies beyond -3σ. Doing the same for pharmacognosy, we find 79% of the cases lie between -1σ and $+1\sigma$ and about 97% between -2σ and $+2\sigma$. Two cases lie beyond -3σ. From the above, we are able to see that although our curves for botany and pharmacognosy do not coincide with the normal curve, yet they approach it rather closely.

By the use of the Pearson formula, the correlation index of relationship from simple series between the final grades in botany and pharmacognosy calculated was found to be $+0.58 \pm 0.04$. This is about the same as the correlation of an average of elementary school marks with an average of first-year high school marks. It denotes a substantial or marked relationship between the two sets of grades.

There is a fair chance that a student doing average or better-than-average work in botany will, under the same conditions probably do about the same kind of work in pharmacognosy, while a poor student in botany has the chances against him. Of course, other factors play a very big rôle in student success. Other things being equal, our data indicates the better the training in botany, the better the chances in pharmacognosy.

Since there is apparently a definite positive correlation between work in botany and pharmacognosy, every effort must be made to give the student as fine a botanical foundation as possible. Our study also shows there is a need for particularly careful teaching in the early months of study in both subjects—teaching which involves closer coöperation between student and instructor, especially in borderline cases.

TABLE I.—COMPARISON OF DISTRIBUTION FREQUENCIES OF THE SCORES MADE IN BOTANY AND PHARMACOGNOSY.

	Botany.							Pharmacognosy.								
	Exam. I.	Exam. II.	Exam. III.	Exam. IV.	Note-book I.	Note-book II.	Final Grade.	Exam. I.	Exam. II.	Exam. III.	Exam. IV.	Exam. V.	Note-book.	Quiz I.	Quiz II.	Final Grade.
96–100	6	15	0	0	2	3	0	4	1	5	18	25	0	0	2	1
91–95	18	8	9	2	5	18	10	6	10	14	25	30	3	9	26	9
86–90	20	19	14	3	26	32	22	9	19	21	27	25	24	12	25	17
81–85	16	7	28	6	26	23	30	12	16	11	15	10	39	28	32	31
76–80	11	16	21	3	26	27	26	8	16	11	6	4	30	17	11	28
71–75	8	14	11	3	9	5	13	18	17	23	5	3	8	19	7	16
66–70	25	28	16	6	15	4	10	12	13	6	5	4	1	9	1	3
61–65	3	3	8	2	2	0	0	11	5	4	2	2	0	11	1	3
56–60	2	0	5	2	1	0	1	10	5	1	0	1	0	3	1	2
51–55	0	0	0	1	0	0	0	8	5	6	1	0	0	3	1	0
46–50	3	0	0	1	0	0	0	4	2	2	0	0	0	0	0	0
41–45	0	1	0	0	0	0	0	5	0	2	0	0	0	1	0	0
36–40	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
31–35	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0
26–30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
21–25	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
16–20	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
11–15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6–10	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
0– 5	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0

TABLE II.—COMPILED STATISTICAL DATA OBTAINED FROM STUDENT RECORDS IN BOTANY AND PHARMACOGNOSY.

	Botany.							Pharmacognosy.								
	Exam. I.	Exam. II.	Exam. III.	Exam. IV.	Note-book I.	Note-book II.	Final Grade.	Exam. I.	Exam. II.	Exam. III.	Exam. IV.	Exam. V.	Note-book.	Quiz. I.	Quiz II.	Final Grade.
Mean	79.9	79.5	77.8	74.2	80.3	84.3	81.0	69.6	75.7	77.8	85.6	88.2	81.3	76.9	84.9	79.8
Mode	68.0	68.0	83.0	83.0 68.0	83.0	88.0	83.0	73.0	88.0	73.0	88.0	93.0	83.0	83.0	83.0	83.0
Median	82.3	78.8	79.8	75.2	81.6	85.3	82.0	71.4	78.0	79.9	89.1	91.3	82.7	78.9	84.4	81.3
Q_1	70.0	70.1	70.7	67.0	76.2	79.5	76.8	59.4	69.4	72.0	82.8	86.1	78.8	71.3	81.7	76.4
Q_3	90.0	89.7	85.1	84.1	87.0	89.9	86.9	82.0	86.6	89.2	94.3	95.8	86.1	84.8	91.2	85.8
Range 1st Quarter	23.0	30.1	14.4	17.0	16.2	9.5	20.8	38.4	69.4	52.0	82.8	86.1	8.8	30.3	26.7	49.4
Range Middle 50%	20.0	19.6	14.4	17.1	10.8	10.4	10.1	22.3	17.2	17.2	11.5	9.7	7.4	13.5	9.5	9.4
Range 4th Quarter	9.0	10.3	8.9	10.9	11.0	8.1	8.1	17.0	13.4	7.8	5.7	4.3	8.9	9.3	7.8	10.2
Quartile Deviation	10.0	9.8	7.2	8.6	5.4	5.2	5.1	11.3	8.6	8.6	5.8	4.8	3.7	6.7	4.8	3.7
Standard Deviation	11.7	12.0	9.4	11.5	7.7	6.8	7.3	16.0	14.2	14.0	14.5	12.0	9.0	10.3	7.7	9.8

Coeff. of Correlation $+0.58 \pm 0.04$.

REFERENCE.

Symonds, Percival M., "Measurement in Secondary Education," The Macmillan Company, New York, 1930.

AN ESPERANTO PHARMACOPŒIA?

The Pharmaceutical Journal of October 26th, states "that a difficulty which would arise immediately in producing an international pharmacopœia—such as was suggested at the Brussels Conference—is the choice of language." Latin is obviously unsuitable for description and modern phraseology. Colin A. Barnes suggests "that the international auxiliary language, Esperanto, be used, as this was adopted by the League of Nations some twelve years or more ago as the only practical language in existence for international use. Many scientific papers have already been published through this helpful medium, and there also exists a dictionary of international medical terms published in the language by one of the European countries."

THE SECTIONS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

The abstracts of the minutes of the sessions held in Portland, Ore., August 5 to 10, 1935 (see also brief summary in report, Final Session, House of Delegates, printed in the JOURNAL for August, September and October 1935). Titles of papers will be given in the Minutes; discussions, if any, will be printed when paper is published if not included in the minutes. The Editor will be thankful for correction of errors.

Abstracts of a large number of papers were distributed at the meetings; some have been printed. Abstracts of some papers are still obtainable by addressing the JOURNAL OF THE A. PH. A., *2215 Constitution Ave., Washington, D. C.*

SCIENTIFIC SECTION.

The First Session of the Scientific Section was called to order by Chairman E. V. Lynn, August 7th, at 2:00 P.M., in Multnomah Hotel.

The Chairman stated that the first order of business would be the Address of the Chairman during which First Vice-Chairman, H. M. Burlage, presided. The address follows:

THE CHAIRMAN'S ADDRESS.

BY E. V. LYNN.

One of the pleasant duties which is every year expected of your chairman is that of extending greetings of the officers to the members and visitors. It is with the most sincere feeling that these usual expressions are made to you to-day. The attendance may be low because of our distance from the geographical center, but our meeting can be of great interest and aid to all of us and it is urged that each contribute freely toward making this an especially successful session. As is usual, any credit for the task of making arrangements has been due to our secretary and it is a great pleasure to make here public acknowledgment to the present, efficient incumbent of that office.

During the past few years our progress and the volume of scientific literature which has been offered to us have grown to unusual proportions. As has frequently been pointed out in previous sessions, there was a time when we needed to beg for contributors in order to make creditable use of our time. The objective of each set of officers year after year was to build up an organization by this means which would do much for pharmacy in the way of comprehensive and meritorious research and of discoveries of important new facts concerning the scientific aspects of our profession. The results of these efforts have been so successful that we are now confronted with the unique problem, how to take care of the numerous papers which are offered.

The original object of our meetings was to foster investigation, to keep American pharmacy abreast of that in other countries and even as leader and to maintain it on a qualitative plane at least equivalent to that of other professions. To-day there is certainly no need for altering that view in any respect; we should make it a single creed and rest well content if we can contribute in any great degree toward that goal.

Nevertheless, the situation in which we find ourselves warrants the most careful consideration. There is now offered such a large volume of written reports that we have difficulty in caring for it. If we continue to increase thus the results of our energy in research, there may come a time, if it is not already upon us, when the space available for printing will be entirely inadequate. Under existing circumstances the ASSOCIATION cannot increase the size of the JOURNAL to make the necessary space. What can be done to solve the problem?

One solution would be to accept finally only papers of merit. That some of the matter which is offered could be classed as inferior and dispensable is well known. Some of it is by no stretch of the imagination in the field of pharmacy; some of it deals with easily accessible facts, being merely summary or recapitulation; some of it is of trifling nature, hardly worth the importance assigned to it; some of it embodies only expression of opinions from the authors, without experimental facts. As a zealous investigator, your chairman may readily have been guilty with others, because intimacy with a particular problem can easily distort one's perspective. The

fixing of blame, however, is not of moment. The important point is the need for some reliable method of sifting in order to eliminate undesirable matter from publication by this section.

Let it be emphasized as forcefully as possible that your chairman, and without doubt our entire membership, would set no limit on worthy papers. If we should receive reports of this desirable sort, even up to many times our capacity to print, let us accept them gladly and find means to express our appreciation to the authors. The problem of finding space for publication could then be attacked.

It is first necessary, however, to sift out that portion of the manuscripts which could well be eliminated. To my mind the vital question is of quality and not of quantity. Our space in the JOURNAL should be occupied by scientific literature of a character as high as we can possibly make it, for by this literature is American pharmacy judged.

Our action, in 1933, of reviving the Board of Review of Papers and of insisting that all articles be submitted to it was an excellent step, but there is still opportunity for great improvement in this direction. Each paper which has been read during our sessions is at present automatically turned over to the Board. During the two years of this system, members of the Board have conscientiously taken their duties in the proper, serious way and have submitted each manuscript to minute inspection. The adverse criticisms and specific recommendations were then transmitted to the editor for action. Although the latter has power to refuse acceptance of any paper or part thereof, this places an excessive burden upon an already overworked individual. Whether he has or has not succeeded in having the manuscripts properly revised in accordance with findings of the Board is entirely immaterial. There should be some more reliable and easier method for getting the result accomplished.

Your chairman wishes to make recommendations on this subject, which to him seems to be our only important problem. That we should continue to foster a spirit of research, and endeavor to advance our profession as rapidly as possible in this direction is always mandatory, but no specific action is needed; each of us can aid by individual effort. On the other hand, we can as a body do much toward raising the quality of what goes into the JOURNAL. To that end it is recommended that:

1. The Board of Review shall be given power to reject or accept papers, or parts of papers, for publication and to require revision by the authors when necessary.

If this were adopted, the editor would ultimately receive the manuscript in shape for printing, except for editorial corrections and arrangement.

2. The Board shall be increased to ten members, each serving for five years. They shall be selected and a chairman named by the incoming officers, acting collectively. Any vacancies by resignation or death shall be filled by the contemporary officers.

3. The Board shall draw up a list of rules and regulations for the guidance of its members and of authors. This list shall be presented for approval by this section at the next annual convention.

There is another matter which your chairman deems important enough to warrant careful consideration. You will have noted that a large share of the papers this year are to be presented by title only. This seems contrary to the spirit of our objectives, since our primary purpose is to meet here in order to hear and discuss the results of recent research. It is recommended, therefore, that:

4. All papers must be presented as given on the program, either in abstract or in total. In the case of unavoidable absence, presentation could be delegated to some one else conversant with the subject.

There is still one more matter which should be called to your attention, although no particular action is required. It seems logical to assume that the volume of worthy matter to be published will continue to increase in the future. Some day there will be need for an expanded journal or some new organ as a medium. At present the dues are insufficient to permit a larger journal or more frequent issue. Undoubtedly soon it will be necessary to find a source for greater income, whether by larger dues, by abolishment of including subscription to the JOURNAL in these dues, by payment from authors for permission to publish papers or by some other means. While the section has no power to decide in what way this can be accomplished, yet each member, as a voter in the ASSOCIATION, will have a vote in the final decision. It is good policy to accord this subject careful consideration so that we will be in a position to give meritorious counsel when the time comes.

In concluding, let me express my appreciation of the high honor conferred upon me a year ago in electing me as chairman of this Section. It has been doubly an honor to me because precedent was set aside in choosing an absent member. Your chairman hopes that you have not and will not regret that decision and that the present session will prove of satisfaction and profit to all of you.

After the reading of the Chairman's Address, Vice-Chairman H. M. Burlage appointed the following Committee on President's Address: *Chairman*, Glenn L. Jenkins, Baltimore, Md.; F. E. Bibbins; Lloyd E. Harris; C. O. Lee. (See report of Committee in minutes of the House of Delegates, October JOURNAL, pages 920 and 921.)

Chairman E. V. Lynn then resumed the chair; he called for the report of Secretary F. E. Bibbins. The report follows:

THE SECRETARY'S REPORT.

BY F. E. BIBBINS.

Your secretary wishes to offer the following report.

Your secretary appreciates the privilege of having been elected to this office and acknowledges the coöperation which he has received from the other officers.

A call for papers for the 1935 meeting was published in the JOURNAL in May, and this was followed by sending two hundred and eighty letters to a mailing list of the members of the Scientific Section. To this list is added from year to year those who have contributed papers for the first time. The response to this appeal was very successful, as you will note that eighty-four titles appear on the official program.

There has been considerable correspondence from the secretary's office this year, partly due to the fact that every contributor was advised of a change in our By-Laws requiring that papers should be submitted in duplicate, so that one copy would be available for publication and the other copy for the Ebert prize.

On motion duly seconded, Chairman E. V. Lynn called for the report of Board of Review of Papers. It was presented by Chairman F. E. Bibbins. It follows.

REPORT OF BOARD OF REVIEW OF PAPERS, SCIENTIFIC SECTION, A. PH. A.

The Chairman wishes to make the following report.

First, I wish to acknowledge the splendid coöperation on the part of the other members of the Committee in reviewing the numerous papers which were assigned to them by the Chairman, and the promptness with which the papers were returned to the Editor.

This committee reviewed seventy-four papers, a considerable number of which were returned to the authors for corrections, and some for rewriting. It was also necessary that a few of the papers be cut down. In every case the authors complied cheerfully with our requests.

I wish also at this time to acknowledge the excellent spirit shown by Editor Eberle, as he has coöperated carefully with us in this work, even though at times it probably held up his work on the JOURNAL.

(Signed) FRANCIS E. BIBBINS,
Chairman.

The report was received.

Chairman Lynn called for a report of the Committee to Coöperate with the National Conference on Pharmaceutical Research.

Chairman J. C. Krantz, Jr., stated that the Committee had no report.

The report of the Committee on Monographs was read by Secretary F. E. Bibbins.

The report was received and it was ordered that it take the usual course.

Chairman E. V. Lynn appointed the following as members of the Committee on Nominations: *Chairman*, L. W. Rising, Seattle, Wash.; F. J. Bacon, Cleveland, O.; L. W. Rowe, Detroit, Mich.

Chairman Lynn stated that if anyone desired to bring anything before the Section the opportunity was now offered.

There being no general business the reading of papers was called for.

The first paper on the program was entitled, "A Note on the Action of Alkalies and Alkali Salts on Antipyrine" by Lloyd E. Harris and E. D. Tebow. The paper was presented by Mr. Harris. (No discussion.)

The second paper entitled, "The Test for Redistilled Water in the N. F. VI Monograph," by R. S. Adamson, R. K. Snyder and E. N. Gathercoal was presented by the latter.

Glenn L. Jenkins inquired why a more dilute reagent was not used and a greater volume of it. He was informed that it did not make any difference whether $^1/_{10}$ normal or $^1/_{20}$ normal was used.

The following papers were read:

"A Note on the Assay of Mass of Ferrous Carbonate," J. C. Krantz, Jr., and C. Jelleff Carr. (No discussion.)

"A Simplified Assay for the Official Iodine-Iodide Solutions" by Wm. F. Reindollar. (Published in September JOURNAL, pages 756–758.)

"The Bactericidal and Bacteriostatic Value of Colloidal Cadmium Proteinate," W. A. Lott and W. G. Christiansen. (No discussion.)

"Antiseptics—a Comparative Study of Laboratory and Practical Tests," George F. Reddish. (Introductory remarks by speaker.)

"A Modified Nessler's Reagent Test for Aldehydes in Ether," E. C. Billheimer, F. Van Deripe, F. F. Berg and F. W. Nitardy. (No discussion.)

The following papers were read:

"The Sulphur Ointments and Their Assay," Charles E. Brady and Henry M. Burlage. (No discussion.)

"Bismuth-Sodium-Potassium Tartrate Solutions," A. H. Clark. In his absence this paper was read by E. N. Gathercoal and also the paper entitled:

"A Further Note on the Stability of Sodium Sulphite," A. H. Clark and Solomon Gershon.

Joseph Rosin stated that to obtain bismuth hydroxide reasonably free of nitrate, a cold solution of hydroxide must be used for precipitation.

A paper entitled, "A Rapid Method for Standardizing Silver Nitrate Volumetric Solution," Robert D'Orazio, was read by title. (No discussion.)

Chairman Lynn announced that the next two papers, entitled, "Camphor in Camphor Liniment IV" and "The Use of Antioxidants" by Charles F. Poe would be read by title. (No discussion.)

A paper on "Daturic Acid" was presented by Ralph W. Clark. (The paper is published in the October JOURNAL, pages 843 to 847.)

The next paper on the program was "A Study of the U. S. P. Thyroid Assay." This is printed in the September JOURNAL, pages 742–747. The paper was discussed by F. O. Taylor, E. N. Gathercoal and the author.

Among the questions were several relative to the accuracy in assaying tablets with low thyroid content. The author replied that if the content is low the quantity can be increased to a certain extent without disturbing the procedure.

The next paper of the program was entitled, "The Assay of Phenol Containing Preparations" by Glenn L. Jenkins and Melvin H. Duncan, presented by Glenn L. Jenkins. (F. O. Taylor confirmed the work of the authors.)

The following papers were read by title.

"Observations on Opium Assay" by Joseph Rosin and C. J. Williams. (No discussion.)

"Assay Hydrolysis Method for Opium Assay," G. E. Mallory and Peter Valaer, Jr. (No discussion.)

A paper on the "Assay of Official Syrups containing Hypophosphites," Glenn L. Jenkins and Charles F. Bruening, was presented by Glenn L. Jenkins. (No discussion.)

"The Assay of Official Hypophosphite Salts," Glenn L. Jenkins and Charles F. Bruening. (No discussion.)

The following papers were read by title:

"The Assay of Organic Medicinal Preparations Containing Arsenic," Edward H. Hughes. (No discussion.)

"Some Mercuriated Derivatives of Thymol and Carvacrol," Joseph B. Burg. (No discussion.)

"Mercury Derivatives of Azo Dyes," Wm. Braker and W. G. Christiansen. (No discussion.)

"Phenyl Mercury Nitrate and Some Other Phenyl Mercury Salts," T. B. Grave, S. E. Harris and W. G. Christiansen. (No discussion.)

The First Session of the Scientific Section was then adjourned.

SECOND SESSION.

The Second Session of the Scientific Section was convened by Chairman E. V. Lynn, August 8th, 9:00 A.M. The reading of papers was continued. The following were read:

"A Study of the Anesthetic Properties of Trichlorethylene," John C. Krantz, Jr., C. Jelleff Carr and Ruth Musser. (It is printed in the September JOURNAL, pages 754 to 756.)

"Absorption of Drugs by the Human Skin," A. Richard Bliss. (Read by title, presented by Frederick Grill.)

J. C. Krantz, Jr., inquired if phenol is more readily absorbed from a petrolatum base than from olive oil. Mr. Grill said there was no definite statement but that there was an inference that such might be the case.

The following paper was presented:

"The Effectiveness of Theelol by Oral Administration," L. W. Rowe and A. E. Simond.

Chairman Cook stated that there had been a great deal of variation in these products and an effort was being made to establish relationship. He referred to the work of Dr. H. H. Dale and a letter issued by him had been sent to interested laboratories and the suggestion made by the Biological Committee that they endeavor to develop coöperative studies in an effort to determine how uniformity can be brought about by coöperative studies.

The following paper was read by title, "Notes on the Colorimetric Assay of Digitalis" by Knudsen and Dresbach Method," F. A. Upsher Smith. (No discussion.)

The following paper was presented:

"Comparison of Six Methods in Assaying the New Ergot Principle," Edward E. Swanson, Chester C. Hargreaves and K. K. Chen. (The paper is printed in the October issue of the JOURNAL, pages 835 to 839.)

L. W. Rowe desired to know the difference between this isolated rabbit uterus method and the guinea pig method; whether the use of the rabbit's uterus is a method of direct testing just as that of the guinea pig's uterus; or is it a reversal method. F. E. Bibbins said it was not a reversal method but the alkaloid causes a contraction of the rabbit's uterus. In work published in three laboratories has been referred to under Ergotocin, Ergostetrin and Ergometrin. It is probably present to the extent of $^1/_{22}$th to $^1/_{13}$th of the total ergot alkaloids, and although preparations containing it do not contract the rabbit's uterus, the isolated principal produces this effect.

John C. Krantz inquired whether ergotrate was the same alkaloid. Mr. Bibbins replied in the affirmative. L. W. Rowe inquired whether he believed that this alkaloid is identical with the principle reported by Dale and Dudley. Mr. Bibbins replied that from samples obtained and data, he was inclined to believe these three are all the same.

The next paper was on "Fluid Extract of Ergot: Effect of Acidity on Biologic Activity and Determined by U. S. P. 1935 Revised Assay," F. F. Berg. (Discussion will be included when the paper is published.)

The following paper was presented by title.

"A Toxicological Study of the Cutaneous Secretions of the Salamander, *Triturus torosus* (Rathke)," Ernst T. Stuhr. (No discussion.)

The next paper, "Dialkylamino Acetyl Ureas," T. C. Daniels. The author was asked on what animals the tests were made; he replied, "On White Rats."

The next paper, "A Study of the Assay of Aconite and the Stability of Its Preparations," George L. Baker and Dean Charles B. Jordan.

L. W. Rowe inquired whether the method presented checked well with the U. S. P. Method.

C. B. Jordan replied that they did and the results were recorded in the paper. The authors assumed that the variations experienced were due to errors in biological assay. Other constitu-

ents besides aconitine are active, but there does not seem to be much information obtainable on the subject.

John C. Krantz, Jr., was of the opinion that more consideration should be given to the therapeutic use of aconite.

The next paper by Arthur H. Uhl on "The Fatty Oil of Podophyllum Peltatum," was read. (No discussion.)

The next paper "Evaluation of a Deterioration Factor in Liquid Petrolatum," P. L. Burrin, A. G. Worton and F. E. Bibbins.

F. F. Berg stated that the experience in their laboratory confirmed the work of the authors.

The next paper was entitled, "A New Silver and Mercury Colloidal Compound," Earl Voelker. (Discussion.)

A paper by Henry J. Goeckel, "Modern Pharmaceutical Research Problems," was presented. (No discussion.)

"Some Thymol Derivatives of Possible Medicinal Value," F. A. Gilfillan and John R. Merritt. (No discussion.)

The next paper was on, "Solution Cresol Compound, the Variation of Phenol Coefficient when Different Oils Are Used for Saponaceous Base," P. L. Burrin, A. G. Worton and F. E. Bibbins. (No discussion.)

The next paper was entitled, "Ephedrine Synthesis I: The Preparation of Propiophenone Diethyl Acetal and of 1-Phenyl-1-Ethoxy-Propene 1," Ernest L. Beals and F. A. Gilfillan. (No discussion.)

Chairman Lynn then announced that there were three papers on strychnine.

"Strychnine IV. Lethal Dose Studies on Cattle and Sheep," J. C. Ward and F. E. Garlough.

"Strychnine V. Variations in the Same and Different Species of Rodents," by A. W. Moore.

"Strychnine VI. Variations in Physiological Action of C. P.," as prepared by J. C. Ward, J. C. Munch and F. E. Garlough.—There was no discussion.

The following eleven papers were presented by title:

"Studies on Barbiturates. XI. Further Contributions to Methods of Barbital Research," Charles R. Linegar, James M. Dille and Theodore Koppanyi. Printed in the October JOURNAL, pages 847 to 852.

"A New Crystalline Compound from Catnip," Minnie Meyer and Edward Kremers. (No discussion.)

"The Preparation of *p*-Butyl Saligenin," Robb V. Rice, W. C. Hardin and Glenn L. Jenkins.

"A Chemical Examination of the Fatty Oil of Poke Root," Glenn L. Jenkins and Samuel W. Goldstein.

"Evaluation of Vermicides," Glenn L. Jenkins and L. Lavan Manchey.

"The Importance of Kidneys in the Standardization of Digitalis," B. Boucek. (No discussion.)

"A Comparative Study of the Pharmacological Actions of Natural and Synthetic Camphor," B. V. Christensen and H. J. Lynch. (No discussion.)

"Cyanide Poisoning and Its Treatment," K. K. Chen, Charles L. Rose and G. H. A. Clowes. (Printed in the August JOURNAL, pages 625 to 630.)

"Pharmacological Action of the Alkaloid of Han-fang-chi" by K. K. Chen, A. Ling Chen, Robert C. Anderson and T. T. Chow. (No discussion.)

Chairman Lynn announced a paper on "The Detoxification of Strychnine by Pentobarbital Sodium," Edward E. Swanson.

A paper on "Gelatin as a Stabilizing Colloid for Oil in Water Emulsion Systems," Linwood F. Tice, was presented by E. F. Cook. (No discussion.)

The Second Session of the Scientific Section was then adjourned.

JOINT SESSION SCIENTIFIC SECTION AND SECTION ON PRACTICAL PHARMACY.

A Joint Session of the Scientific Section and the Section on Practical Pharmacy and Dispensing was called to order by Chairman E. V. Lynn of the Scientific Section. Chairman H. M. Burlage of the Section on Practical Pharmacy presided as co-chairman.

The first item on the program was a report on the United States Pharmacopœia by Chairman E. F. Cook. The report is printed in the September JOURNAL, pages 796 to 800.

The report on the National Formulary was presented by Chairman E. N. Gathercoal. It is printed in the August JOURNAL, pages 689 to 694.

The report of the Committee on Recipe Book by Chairman J. Leon Lascoff was presented by title. It is printed in the August number of the JOURNAL, pages 694 to 699.

Chairman Burlage called for the Committee on Unofficial Standards. Former chairman, J. C. Krantz, Jr., stated that the Committee had been discontinued.

Report of the Committee on Glass Standardization was presented by H. V. Arny. (It was received.)

Chairman Lynn resumed the chair and called for the report of the Committee on Ebert Prize. It was presented by Chairman Glenn L. Jenkins. The report of the Committee follows:

REPORT OF THE EBERT PRIZE COMMITTEE.

Your Committee unanimously recommends that the Ebert Prize for the best paper presented at the 1934 meeting be awarded to Professor Marvin J. Andrews, author of the paper: "Determination of the Reasonable or Permissible Error in Dispensing."

(Signed) GLENN L. JENKINS, *Chairman*, FOREST J. GOODRICH, B. V. CHRISTENSEN.

Chairman Lynn announced that the next item of the Program was the report of the Committee on Collection of Information Pertaining to Professional Pharmacy, prepared by Chairman M. J. Andrews and presented by Secretary Leon W. Richards.—The report was received—to be published.

The report of the Committee on Prescription Tolerances was presented by H. H. Schaefer. It was received—to be published.

The reading of papers was proceeded with.

The first paper entitled, "Daphnia—The Biological Reagent," Arno Viehoever.

The second paper, "Biochemistry of Podophyllum Peltatum," by Arno Viehoever and Harry Mack, read by E. F. Cook.

These two papers were presented by lantern slides, showing the effects of these drugs.

After the conclusion of the papers a motion was made by R. J. Goodrich expressing thanks to the authors.

Chairman Cook stated that there is a reprint available concerning the propagation and means of keeping Daphnia alive and also a paper on the subject presented, showing the action of drugs.

The Joint Session was then adjourned.

THIRD SESSION.

The Third Session of the Scientific Section of the AMERICAN PHARMACEUTICAL ASSOCIATION was convened on August 9th, at 9:00 A.M. by Chairman E. V. Lynn.

The reading of papers was continued. The first paper was entitled "The Alkaloidal Content of Oregon-Grown *Cytissus Scoparius*," by F. A. Gilfillan and Felipe Patricio Logan. (No discussion.)

E. N. Gathercoal read the following three papers: "Morphological Studies on *Polygala Senega*," Paul D. Carpenter; "Studies on Poplar Bud," Gerston Bruch and Elmer H. Wirth; "Studies on Cudbear," Elmer H. Wirth, L. E. Martin and F. Soderdahl.

In commenting, H. W. Youngken said the papers represented very careful work. The diagnostic differences of *Populus-candicans, balsamifera* and *nigra-* had been brought out. The paper on *Senega* represented careful study—the thicker and thinner walled cells of the phloem were explained, hence, the paper represents a distinct contribution.

The papers "A Study of Lacinaria Species," by B. V. Christensen and G. M. Hocking, and "Differentiating Characteristics of Glycyrrhiza Plants," Arno Viehoever, were presented by title. (No discussion.)

The paper "Microscopy of Powdered Desiccated Thyroid and Suprarenal Glands," was presented by the author, Heber W. Youngken.

E. N. Gathercoal said that when it was first decided to introduce the powdered desiccated glands into the National Formulary, the possibility of identifying them and detecting

adulterants was considered. The group to whom this was referred thought it would be impossible. This work of Dr. Youngken, he was convinced, proves that there is not only a means of identification but a means of determining adulteration. He spoke of the work of Dr. Dunn and of his assistant; the former were pleased with the results of Dr. Youngken's work.

L. W. Rowe inquired whether an effort had been made to differentiate between anterior pituitary and posterior pituitary.

The author replied that this is possible.—The posterior originates from the nervous system and not from the epithelial tissue. (See page 576 of the July JOURNAL.)

Commenting on the next paper, "A Method of Preparation of Buffers for Prescriptions," by C. F. Allen, T. C. Daniels said that a related paper should be discussed before the Section on Practical Pharmacy and Dispensing; it is of particular interest to eye, ear, nose and throat specialists.

A series of papers on "Drug Extraction" (5–9) was presented by William J. Husa. (See prior papers in the JOURNAL.) A remark by the author is applicable—"We are not as greatly interested in what occurs in the percolator as in what comes out of the percolator."

The following papers were presented by title: "The Influence of Certain Salts on Morphine Toxicity and Narcosis in Mice and Rats," J. M. Ort and W. G. Christiansen; "A New Type of Hypnostic Amide," W. A. Lott and W. G. Christiansen; "Preparation of Benzoyl Persulphide," E. Moness, W. A. Lott and W. G. Christiansen; "The Percolation of Cinchona," J. L. Powers and Edward Kremers.

The next paper, "Bioassays of Rodenticides," J. C. Munch, F. E. Garlough and J. C. Ward, was presented by J. C. Ward.

John C. Krantz, Jr., inquired whether white rats were used in the test. The author replied—"White rats and rabbits." Other questions followed—asked how zinc phosphide was administered, the author replied—with acacia or other colloid. Responding to whether the oral method was always used in the tests, the author replied—yes, because they were concerned with the toxicity of these poisons in the stomach. Asked regarding strychnine—this had been administered in acacia; parenteral methods had been used, but they found variability; they used a large number of animals for making determinations and they are quite well satisfied—within ten per cent, on the basis of using 1500 animals.

A paper on "Thallium," XIII, was presented by J. C. Ward. (No discussion.)

The following papers were read by title. (No discussion.)

"Constituents of Ma-fang-chi," A. Ling Chen and K. K. Chen; "The Cat Units of Seven Crystalline Cardiac Principles from Plants," K. K. Chen, A Ling Chen and Robert C. Anderson; "Harmine from Caapi," A. Ling Chen and K. K. Chen; "A Study of Several Species of the Genus Monarda," B. V. Christensen and R. S. Justice; "Histology of Cracca Virginiana, Linné, Root," B. V. Christensen and Elbert Voss; "Monarda Pectinata," Nutt., A Phytochemical Study," Joseph B. Burt and Edward Kremers; "Thiobarbiturates. III. Comparison of Sulphur and Oxygen Analogues," Ellis Miller, James C. Munch and Frank S. Crossley; "Enzymatic Action in the Presence of Some Common Antiseptics," O. E. Rumple and R. J. Hartman; "Some Properties of Ergostetrine," Marvin R. Thompson.—(See September JOURNAL, pages 748–753.) "Preparation and Toxicity of Bismuth Salts of Camphoric Acid Esters," W. M. Lauter and H. A. Braun; "A Study of Bismuth Salts of Gluconic Acid," W. M. Lauter and H. A. Braun; "Evaluation of Line Methods for Determining Morphine in Opium," V. H. Wallingford and August H. Homeyer; "Report of Chemical Assay for Ergot Alkaloids," C. K. Glycart; "The Volatile Oil from Western Yarrow," R. L. McMurray; "The Toxicity of Hydrocyanic Acid Gas," J. N. Etteldorf.

A paper on "Chemical Study of Sulphur Ointment," Lewis C. Britt. (See October JOURNAL, pages 854–856.) Glenn L. Jenkins described a method by simple ignition of the ointment and then analyzed for sulphur by the Parr bomb method.

The report of the Committee on the Chairman's Address was read and received.

The report of the Committee on Nominations—L. W. Rowe, Franklin J. Bacon, L. W. Rising—was read by L. W. Rowe, nominating: *Chairman*, H. M. Burlage; *First Vice-Chairman*, Glenn L. Jenkins; *Second Vice-Chairman*, J. C. Ward; *Secretary*, F. E. Bibbins, continues for 3-year term; *Delegate to the House of Delegates*, E. V. Lynn. After formal action the nominees were duly elected.

Glenn L. Jenkins reported the action taken on the award of the Ebert prize to Marvin J. Andrews. The action was approved.

The officers for the ensuing year were duly installed.
The new officers expressed their appreciation of the honor and accepted the duties of office.
The retiring Chairman, E. V. Lynn, expressed his appreciation of the honor of office.
The Scientific Section was then adjourned in due form.

SECTION ON PRACTICAL PHARMACY AND DISPENSING.

The First Session of the Section on Practical Pharmacy and Dispensing was called to order by Chairman H. M. Burlage at 9:15 A.M. He requested R. W. Clark, *Delegate to the House of Delegates*, to take the chair during the reading of the chairman's address. The address follows:

ADDRESS OF THE CHAIRMAN.

BY H. M. BURLAGE.

Since this is the first meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION on the Pacific Coast for many years and since many pharmacists are gathered in Portland for the annual meetings of the State Associations of Idaho, Washington and Oregon, this 83rd annual meeting should be a memorable one for all of us who are able to attend, even though our coming has been at a great sacrifice. I, as *Chairman* of the Section on Practical Pharmacy and Dispensing, welcome all pharmacists here assembled, as well as the members of the A. PH. A. residing on the Pacific Coast and in the Pacific Northwest, to our sessions and we hope that you will be benefited by the papers, discussions and deliberations which may arise. We hope that you will convey to us manifold new ideas and thoughts which have been brought to your minds during your practice of our ancient and honorable profession in this region.

I note on our program the names of several individuals who reside in this section and I hope that those of us who have purposely traveled far for these meetings will avail ourselves of the opportunity of becoming acquainted with these pharmacists, for I know by virtue of the unusual opportunities that are offered them in this beautiful country that you will profit by their acquaintanceship. I know whereof I speak, since I have had the advantage of five years' association and residence in this section.

I do not intend to consume much of your time, as is so often done in chairmen's addresses to eulogize our profession. Its history speaks for itself; its present and its future should concern all of us who are interested in its welfare.

U. S. P., N. F. AND RECIPE BOOK.

Within a short time we will have available new revisions of the Pharmacopœia, the National Formulary and the Recipe Book, which are the standards and the handiworks of our profession. It behooves all of us to become thoroughly acquainted with these works, to see that every pharmacy in the country has these available and then to assist in a program of propagandism whereby the workers in the allied profession become thoroughly convinced of their value and of the worth of the products therein recognized. Such works, in spite of the efforts of many reputable investigators, cannot be perfect and the research workers among us should immediately begin to study and examine them with an aim toward improvement. These new editions, no doubt, will present some radical changes which we all hope are for the best.

WORK OF THE OFFICERS.

During the past year your chairman, with the help of the officers of the Section, has attempted to nullify a criticism that has been made quite often with regard to the programs of this Section, *i. e.*, that many of the papers are too scientific in character, since they are offered by teachers of pharmacy and other scientific workers in laboratories of manufacturing establishments, etc., and that they, therefore, are not of a practical professional nature representing the problems gen ally met with in the retail, professionl and hospital pharmacies. How justifiable is such a criticism? Possibly the facts will speak for themselves.

A study of the programs of this Section for 1920–1934, inclusive, reveals 316 papers representing the efforts of 399 authors or co-authors, or 327 different individuals. An examination of the titles of these papers, in so far as your chairman's judgment could operate, indicates that ap-

proximately 170 (or 53.8%) of these were of sufficient interest to any practitioner of pharmacy in the retail, professional or hospital vocations. The remainder of the titles would indicate papers that pertained to the scientific aspects of individual subjects dealing with theoretical and scientific pharmacy. I am wondering, who of us could be so narrow in our views and outlook to demand that the latter types of papers be eliminated from our programs? Certainly we have too much of commercialism before us now.

We are, however, dealing with facts so let us proceed further in order to ascertain if the criticism mentioned is justifiable. Of the 327 individuals represented on the programs 166 (or 41.7%) were teachers and students (probably graduate students), 80 (or 20%) commercial and commercial laboratory workers, 44 (16 of which were doubtful) (or 11%) were retail and professional pharmacists, 33 (or 8.3%) unclassifiable, because of lack of information, 23 (3 doubtful) (or 5.7%) hospital pharmacists and 5 (or 1.3%) members of boards of pharmacy. If the unclassified are considered as retail pharmacists this number rises to 19.3%; if board members and hospital pharmacists are included the total rises to 26.3%, or slightly more than one-fourth of the total number of authors were practicing pharmacists. Certainly not an imposing number considering the total of those working in the various classifications of the profession.

This résumé indicates that 73.7% of the authors of papers were teachers and laboratory workers. This large percentage, no doubt, can be accounted for because these workers have probably more time available and better laboratory facilities for such work and, above all, a greater interest in the problems confronting the profession. Certainly the figures reveal that too few of the registered pharmacists in the retail, professional and hospital pharmacies are taking an active part in the A. PH. A. and this section. The following reasons might be offered to account for this condition: (1) the average retail pharmacist is too busy with things commercial and too occupied in combating a competition for which he is mightily responsible; (2) and as a result of the first mentioned condition he is not primarily interested in phases of professional pharmacy which serve as the very core of the profession, particularly the dispensing department. This, to my mind, is one of the discouraging present-day aspects of pharmacy and one which we, who are interested in the teaching of pharmacy, hope will be overcome in due time by the advent of the four-year minimum course in pharmacy; (3) apparently the proper contacts and methods of approach with the view of interesting these numbers in membership of the A. PH. A. have not been followed by the individuals in the organization responsible for such a campaign. It is, of course, impossible to ever hope that every retail pharmacist would maintain a membership in the A. PH. A., but I believe that almost 100% of the professional and hospital pharmacists of this country should hold such membership. Previous chairmen have time and again before this section recommended that the ASSOCIATION make special efforts to interest the latter two groups in the organization.

As a result of the above mentioned study the officers of the section decided to make special efforts to interest more practicing pharmacists in the activities of the section. Accordingly, letters were sent to the deans of the Schools of Pharmacy and secretaries of State Associations requesting the names of pharmacists who might be interested and capable of presenting a paper before this body, and it was emphasized that it was not necessary for the author to be present or for him to be a member of the association. What was the result of such a solicitation? One officer reports that in response to 17 letters—to 8 deans and to 9 state associations—only one reply was received and one name suggested and no paper. Another sent out 48 personal letters and received 8 replis from 5 deans and 3 secretaries and finally 6 replies from those whose names had been suggested. A third wrote to 10 secretaries and 8 deans, received replies from 7 deans and no secretaries. These replies, however, included 31 names of individuals to solicit; three of this number stated that they would offer papers, but I note only *one* title from this group on the program. A fourth sent out 35 letters to individuals in the pharmaceutical retail field. I believe the results of this canvass are almost self-evident and indicate in a vivid manner why a majority of the authors are not practicing pharmacists, and it also points out how interested some deans and state secretaries are in the sections of the ASSOCIATION and what little faith they have in the capabilities of the persons whom they represent and have trained.

COMMITTEES OF THE SECTION.

The chairman of the Committee on Glass Standardization previously requested that this

committee be discontinued, but the Section overruled the recommendation. Since he repeats his request I recommend that this committee be discontinued unless recent developments have arisen which warrant its continuation.

During the year a new committee known as the Committee for the Collection of Information pertaining to Professional Pharmacy was created, and under the guidance of Prof. Marvin J. Andrews has made remarkable progress. His report will be given at the Joint Session and should be of interest to all of us. Its work has just begun and I recommend its continuation and that the Council be requested to appropriate $75.00 to carry on this work. This appropriation includes $50.00 to cover expenses of correspondence for 1935–1936, and $25.00 to purchase filing materials for properly preserving the information collected during 1934–1935, in the INSTITUTE OF PHARMACY. I further recommend that the new chairman hold intact the present personnel of this committee unless the committee chairman requests changes or additions, since its work will be handicapped by the appointment of new members who are not familiar with procedure that is being followed.

In conclusion I wish to express my appreciation of the honor that the Section has bestowed upon me in electing me its chairman, and my thanks are offered to the officers of the Section and others who have coöperated in the work that has been done, and especially to Secretary Richards who deserves all the credit for the program which follows; his task has been a difficult one.

I recommend that in Chapter IX, Article II, the words "and a brief abstract of all papers, not to exceed 250 words," be deleted.

A motion was made by William Gray, seconded by E. T. Motley, that the Chairman's Address be received and referred to a special committee. The Acting Chairman appointed H. A. Langenhan, E. T. Motley and C. F. Lanwermeyer.

REPORT OF THE SECRETARY.

BY LEON W. RICHARDS.

The Section on Practical Pharmacy and Dispensing has endeavored to enlist the interest of as many new contributors as possible by definitely centering the attention of this meeting on the fields of retail, professional and hospital pharmacy.

The Secretary wishes to express to his fellow officers his appreciation for the assistance given him in sending out the necessarily large number of personal letters to accomplish this end.

The response from pharmacy men, especially those of the Northwest, is ample reward for our efforts, and I wish to thank each author on our program for his interest and coöperation.

The report was accepted.

Chairman H. M. Burlage appointed E. L. Hammond, R. A. Cain and E. T. Motley, *Chairman*, members of the Committee on Nominations.

The Chairman announced the reading of papers.

The first paper was presented by George D. Beal, "Carbo Activatus," by Joseph Rosin, George D. Beal, Chester R. Szalkowski. (Published in August JOURNAL, pages 630–634.) "Foresight in Professional Pharmacy" was read by title, because of the unavoidable absence of the author, E. T. Stuhr. "Dentistry and Pharmacy as Cognate Professions" was presented by the author, Raymond P. LeRoy. Drawing on his paper, he said that a slightly hypotonic solution was desirable for the purpose of anesthetic efficiency. The matter of containers for novocain solutions was also discussed. The next paper, "Is Extemporaneous A Moribund Art?" by Wm. F. Reindollar, was read by title. "Back to Pharmacy" was presented by Roy A. Perry.

William Cray complimented the author. He questioned the guaranteeing of a preparation; in some instances refunding of the money would not answer the purpose he had in mind; the simple ailment might result in a more serious one. The subject was discussed along related lines by E. R. Serles, P. H. Dirstine and L. D. Bracken.

The author stated that all dispensing required judgment, it is necessary to use care and he always had in mind the best possible preparation rather than a large sales volume. There was a demand for packaged medicines and in his opinion—to supply a better preparation was a service; he always advised consulting the physician and dentist, but many times the patrons would say—"they were not that sick."

L. D. Bracken said he did not sell "patent medicines," but he realized the economic de-

mand for such products. He invariably advised the patron to consult the physician, but if the patron insists on making a purchase, it is better to supply what the pharmacist has prepared carefully and honestly.

H. A. Langenhan thought there was opportunity along the lines advocated by the author, provided thought and care was exercised.

There was no discussion of the paper on "Manufacturing and Marketing Toilet Products from Your Own Laboratory," by Alex F. Peterson, Jr.

"New Products and the Problems They Present," by Ronald V. Robertson. The author discussed the subject, he referred to a number of preparations representing the same product and necessitating the stocking of them. Earl Gunther commended the paper and, in his opinion, something should be done to correct the situation.

The paper on "The Stabilization of Milk of Magnesia by Citric Acid," E. C. Bilhuber, F. F. Berg and F. W. Nitardy, was temporarily deferred on request of F. F. Berg.

"A Service That Built a Prescription Business" was presented by L. D. Bracken.

H. A. Langenhan endeavored to get the physician's viewpoint on the subject of the paper. The author, whose pharmacy has the largest medical practice in the Northwest, said that physicians sought advice. The pharmacy has an average of eighteen calls from physicians to consult on prescriptions for patients.

William Gray stated that physicians wanted information along the lines discussed in the paper. He had read a paper before the Council on Medical Education, by request. Leading men of the medical profession commented favorably, the sum and substance of their opinions being; "Consult your pharmacist—you can learn something." He was of the opinion that physicians welcomed assistance from pharmacists.

The author closed the discussion by saying that some physicians are hesitant in seeking information, but the bigger the man the more readily he will receive information.

There was no discussion on the following papers: "The Need of Greater Care in the Dispensing of Potent Medicinal Substances in the Form of Sugar-Coated Pills in Confections," John F. Suchy; "The Hospital Pharmacists' Work in Southern California," P. W. Howard. (Read by title.) "A Plan for Pharmacy Internships at the University of Michigan Hospitals," Harvey A. K. Whitney and E. C. Watts; "Professional Aspects of Pharmacy," S. H. Dretzka. (Read by title.)

On motion, duly seconded, the First Session of the Section on Practical Pharmacy was adjourned.

SECOND SESSION.

The Second Session of the Section on Practical Pharmacy and Dispensing was convened at 9:00 A.M., August 9th, by Chairman H. M. Burlage. Ralph W. Clark acted as secretary, owing to the temporary absence of Secretary Leon W. Richards.

The reading of papers was continued.

C. O. Lee read a paper on "A Study of Compound Cresol Solution" by K. L. Kaufman and C. O. Lee. The speaker pointed out the value of this work to the students. A method had been devised for making this solution in fifteen minutes, while another formula required three hours. He stressed the necessity of exactness in making the preparation.

H. M. Burlage referred to the use of soft soap in a rapid method for the preparation.

The next paper was entitled—"The Physician and the Pharmacist," by Ralph W. Clark. The author commented, "that pharmacists should read the literature of their Associations and pharmaceutical publications, and they should take an interest in public health matters. If pharmacists would stress professionalism more, the public would be willing to pay more, and would look up not down on the profession of pharmacy."

C. O. Lee inquired how this could be brought about. The author replied—that in Wisconsin they were particularly fortunate in having a president who had experience in both professional and commercial pharmacy.

Frederick Grill stated that their students were impressed with the ideals of Pharmacy. William Gray thought that meetings within the school would prove helpful. Earl Gunther thought that colleges should seek out the problems of the practical pharmacist. C. O. Lee referred to the fact that commercial ideas predominate. William Gray acknowledged the difficulty in stimulat-

ing interest in pharmacy. H. M. Burlage pointed to the influence of those who belittled professional pharmacy and that, perhaps, a division of the students into two groups might prove helpful. Earl Gunther referred to a statement of the professor, "that students should forget their practical (?) store experience." He learned his lesson when the professor informed him that because he had not forgotten his practical (?) experience, his grades were low. Ralph W. Clark stated that, in Wisconsin, they were trying the experiment of having professional pharmacists talk to the students.

"Ointments" was the subject of a paper by Ralph W. Clark. He contended that extensive research was required for determining a scientific base.

William Gray referred to cold cream as a base. C. O. Lee said that absorption of ointments is one of the subjects requiring further investigation. K. L. Kaufman had completed a study of absorption of vitamins; in his experiments with white rats he experienced considerable difficulty in preventing them from eating the Ointment. The reports were somewhat contradictory; he was of the opinion that this presented an interesting field for research and, if any were interested, Mr. Kaufman and he would be glad to submit their line of work.

Sylvester Dretzka presented "The Professional Aspect of the Drug Store." He was of the opinion that something should be done to help those pharmacists who have been in practice for many years to catch up with modern ideas. Perhaps lectures should be provided on pharmaceutical developments; post-graduate work could be arranged, so that these pharmacists would realize the importance of their profession; this would help to reëstablish pharmacy.

He had used the "Open House" idea, inviting patrons and others to inspect the pharmacy; the visitors were interested and gained a better understanding of the work carried on by pharmacists. He referred to an idea borrowed from the plumbers. The Plumbers' Association sends men about the country to acquaint dealers and others with plumbing from the public health standpoint. They contact the Chambers of Commerce, Rotary Clubs, etc., and keep high-salaried men busy all the time; the plumbers contribute toward this expense. "Similar action," he said, "by pharmacists would be of benefit." Legislation is passed, but when it comes to professional matters the legislators are indifferent.

George L. Secord said that when favorable legislation is passed, pharmacists should let the legislators know their action is appreciated.

REPORT ON THE CHAIRMAN'S ADDRESS.

Chairman H. A. Langenhan presented the report of the Committee on the Chairman's Address. The report, with the exception of the action on the presentation of abstracts of papers, is reported by Ralph W. Clark, *Delegate to the House of Delegates*, in the October JOURNAL, page 922. (This part of the Committee Report is made by reference to the former.)

The following is abstracted in brief from the discussion: H. A. Langenhan favored the submission of abstracts, not to exceed 250 words. The chairman of the Section recommended that abstracts be not required—(see Chairman's Report at the beginning of the minutes of the First Session). (The Editor stated that abstracts of the Scientific Section were distributed; *a few* are left, and those interested may obtain copies on request.) H. A. Langenhan said that abstracts, if distributed, would enable the members to become acquainted with the presentations. The following expressed approval of continuing the abstracts: C. O. Lee, John Suchy, F. F. Berg, Charles F. Lanwermeyer.

Chairman Burlage suggested, if the abstracts are continued, they be numbered as the titles of the papers on the program.

Mr. Langenhan said the requirements are—"if the abstract is not presented, the paper may not be accepted." Mr. Clark stated that the abstract must be in the hands of the secretary. After some further discussion, it was decided to continue the abstracts.

The reading of papers was continued: "The Hospital and the Pharmacist, Some Observations in Establishing a Department of Pharmacy," by H. C. McAllister. H. M. Burlage read the paper and commented on the young man's experience and ability. The pharmacy department of the Hospital had been a losing proposition. The author pointed out the necessity of a competent pharmacist; as a result of the changes, the dispensing service had been improved and made profitable.

Ralph W. Clark said the paper should interest pharmacists in hospitals. William Gray stated that each hospital has its problems, depending on the size of the hospital and the medicines

supplied; this paper shows that pharmacists in hospitals can make their services worth while. H. A. Whitney spoke along related lines, E. T. Motley had been a member of a committee to look into the number of pharmacists employed in hospitals and was surprised at the small numbers; he thought something should be done to improve that situation.

The following papers were presented by F. F. Berg, who commented briefly on them:

"The Stabilization of Milk of Magnesia by Citric Acid," E. C. Billheimer, F. F. Berg and F. W. Nitardy; "Comparison of Spectrometric and Antimony Trichloride Methods for the Estimation of Vitamin A Potency of Fish Liver Oils," W. S. Jones, F. F. Berg and W. G. Christiansen; "Study on Washing of Milk of Magnesia through a Permeable Membrane," E. Moness, W. A. Lott, F. F. Berg and W. G. Christiansen; "Medicine Dropper to One Minimum per Drop," R. A. Konnerth, R. E. Schoetzow and F W. Nitardy; "Assay of Liniment of Camphor," by D. A. Overby, R. E. Schoetzow and F. F. Berg.

The next paper entitled "Percentage Solutions" was presented by Earl Gunther, the author, who explained some of the points in percentage solutions and also brought out the details of prescription pricing, based on the Pacific Drug Review Schedule.

He was of the opinion that much must be learned by the pharmacist from practical experience and suggested that practical application should be made in the class room and that teachers should seek practical problems.

H. M. Burlage stated that he welcomed suggestions from pharmacists for class-room study. The paper was further discussed by William Gray, W. J. Husa, Arthur D. Baker and Mr. Snelling.

The chairman presented "Studies on Three U. S. P. and N. F. Preparations," by Henry M. Burlage and W. J. Smith. Secretary Leon W. Richards presided during the reading of the paper. The speaker stated that he impressed on the students the possibility of improving the methods of the standards.

The following papers were read by title: "The Preparation of the Resin of Podophyllum," Arthur H. Uhl; "Hydrophile Petrolatum," Bernard Fantus and Hattie Dyniewicz; "Improvement in Technique in the Preparation of Three Common Products," Edward D. Davy; "Tincture of Opium—Process to Reduce Precipitation," P. L. Burrin and F. E. Bibbins; "Suggested Changes in Three Official Preparations," C. L. Cox; "Modernized Progress of Pharmacy in the Realms of Dispensing," C. George Hamilton; "Errors in Methods Used for Testing Enteric Coatings," F. S. Bukey and C. W. Bliven; "The Percentage Preparation," Ralph Bienfang; "A Table of Equivalents," Ralph Bienfang; "It Can Be Done. Difficult Preparations, Series No. IV," J. Leon Lascoff; "Pharmaceutical and Chemical Incompatibilities," George L. Secord; "Chemical Stability of Anesthetic Ether. Formation of Aldehydes and Peroxides in Ether Stored in Containers not Sealed or Tightly Closed," J. E. Aurelius, E. S. Herlong and F. W. Nitardy; "Practical Pharmacy as Practiced in Free Hospital Clinic of Jefferson Davis Hospital of Houston, Texas," F. N. Bono; also a paper by G. A. Newton. (Not of record.)

Chairman Burlage stated that if there was as much interest in the Section and as many or more papers, the Section would require more time.

E. T. Motley, as chairman of the Committee on Nominations, presented the following list of Nominees: *Chairman*, L. W. Rising; *First Vice-Chairman*, Frank L. Black; *Second Vice-Chairman*, H. A. K. Whitney; *Secretary*, Leon W. Richards; *Delegate to the House of Delegates*, H. M. Burlage.

There being no further nominations, the nominees were duly elected.

Chairman H. M. Burlage thanked the members and expressed his satisfaction with the large attendance during the sessions.

On motion duly seconded and a vote the meeting was adjourned.

(The report of the Joint Session of the Scientific Section and of the Section on Practical Pharmacy and Dispensing is published in connection with the minutes of the Scientific Section.)

SECTION ON EDUCATION AND LEGISLATION.

The First Session of the Section on Education and Legislation was convened, owing to the absence of Chairman Oscar E. Russell, by L. Wait Rising, Secretary, August 7th, at 2:15 P.M.

The following communication was read from Chairman Oscar E. Russell:

Fellow Members:

"Please do not consider this a learned address, embracing all the phases of pharmaceutical education and legislation and a host of recommendations for future improvements.

"Since my contact with this Section has been rather limited I do not feel qualified to deliver or write an address of this nature. Please consider this as a message of greeting to those present and an apology for my absence.

"It is indeed with very deep regret that unusual circumstances have made it impossible for me to be with you. The program for this year's Section meetings seems to me to be unusually broad and comprehensive and from the titles of the papers submitted I would say they will be most interesting. The entire credit for this very admirable program should go to your able secretary, Mr. Rising, who I know has given much time and thought to its preparation. I wish also to express my sincere thanks to those who have given their time and thought in preparing these papers.

"In conclusion, if I were to offer any suggestion whatever for your consideration, it would be that more attention be given to the legislative part of our program than it has received in the past sessions. It might be that the entire program of one of the sessions of the next meeting could be profitably devoted to this subject. Again assuring you of my sincere regret in not being present,

(Signed) OSCAR E. RUSSELL, *Chairman.*"

The Report of the Secretary was read:

THE REPORT OF THE SECRETARY.

BY L. W. RISING.

The secretary carried on the usual activities incident to the organizing of the annual program for the section. No form letters were sent out from his office. All the solicitation for papers was done by personal letters, with gratifying results. The wholehearted and willing coöperation of the persons contacted in making the work of the Section worth while and of real service to Pharmacy spoke well indeed for the character of the leaders in our profession.

The 21 speakers represent geographically practically the whole of the United States coming as they do from North, East, South, Middle West and West. They are a true cross section of the ramified activities of the calling. Among their number are educators, state board members, editors and men engaged in the commerce of pharmacy.

Two new activities of the Section have been carried on this year by committees. They are the work of bringing the dental profession in close association and coöperation with pharmacy, and strengthening hospital pharmacy and its liaison with the profession as a whole. These endeavors are worthy of the continued support of this body.

The secretary desires to take this opportunity to publicly thank those who appear on the program for their efforts in behalf of pharmacy, and the other officers of the Section for their aid in making his duties lighter.

The report of the secretary, on motion, duly seconded, was accepted.

The first paper, "Educational Problems in Pharmacy," was presented by Dr. H. B. Carey of the University of California. (It will be published in a succeeding issue with comments.)

Acting Chairman L. W. Rising appointed the following committees: Committee on Resolutions.—H. A. Langenhan, *Chairman;* H. A. K. Whitney, Leon W. Richards. Committee on Nominations.—Ralph W. Clark, *Chairman;* Lewis C. Britt, E. L. Hammond.

The next paper, "Fair Trade Legislation," was read by Frank E. Mortenson. (To be published.)

The report of the Pharmacy Committee on Professional Relations pertaining to Dentistry was called for; it follows:

REPORT OF THE PROPOSED NATIONAL PHARMACY COMMITTEE ON PROFESSIONAL RELATIONS PERTAINING TO DENTISTRY.

BY GEORGE C. SCHICKS, *Chairman.*

Unfortunately the resolutions passed by the Section on Education and Legislation last year were not presented to the Committee on Resolutions of the AMERICAN PHARMACEUTICAL ASSOCIATION in time to receive consideration.

Chairman Oscar E. Russell of this Section appointed the writer of this report chairman of the above mentioned Committee assuming its approval by the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION. As it now stands there is no such committee unless we follow the suggestion to resubmit the resolutions again this year. With this in mind—

I recommend that this Section adopt the following resolutions so that they may be immediately passed on by the Committee on Resolutions of the AMERICAN PHARMACEUTICAL ASSOCIATION.

"To the end that helpful information regarding ways and means of encouraging the prescribing of U. S. P. and N. F. drugs and preparations by dentists be disseminated and made available to the pharmacists of this country; and to the end that the good work of one community or state may not be lost to other communities or states, therefore, be it resolved:

"That a Committee be appointed—to be known as the National Committee on Professional Information Pertaining to Dentistry. Its specific function shall be:

"*First*—to study the methods used by the various local, county and state organizations in their efforts to bring before dental men usable information on U. S. P. and N. F. drugs and preparations.

"*Second*—To present to the pharmacists of the nation at our next annual convention a digest of constructive ideas gathered from such a survey and other sources.

"*Third*—The Committee is to act as a center for receiving and disseminating information which will increase the pharmacist's opportunities for professional scientific service to the dentist.

"*Fourth*—The chairman of the Committee is to be appointed by the incoming chairman of the Section. He in turn will add members to make it a workable committee."

Be it further resolved that the chairman of the Section on Education and Legislation appoint a committee to study the problem of coöperation with hospital pharmacists and their service to the allied medical professions.

(See report of Committee on Resolutions in August JOURNAL, 1935, pages 711 and 713. Also address of the Chairman, July JOURNAL, 1934, page 735.)

REPORT COMMITTEE ON COÖPERATION WITH HOSPITAL PHARMACISTS.

BY ROBERT W. RODMAN, *Chairman.*

In view of the fact that the resolution creating a Committee on Coöperation with Hospital Pharmacists, which was approved by the Section on Education and Legislation at last year's convention, was not received by the Committee on Resolutions of the American Pharmaceutical Association in sufficient time to permit confirmation; and thus has been unable to serve this Section in the manner outlined in the paper by the writer last year.

My appointment as chairman of this Committee was predicated on the assumption that the Committee would be authorized by the parent body, and since this was not done there has been no committee activity carried on.

If the Section of Education and Legislation still feels that it would be well to investigate ways and means of extending the services of our group to hospital pharmacists in their problems, in a greater measure, I should recommend that the resolution creating this committee, as passed at the 1934 meeting of the Section, be retransmitted to the House of Delegates of the AMERICAN PHARMACEUTICAL ASSOCIATION.

On motion, duly seconded, George C. Schicks was requested to forward the resolutions of the foregoing to the Resolutions Committee, A. PH. A.

Reading of papers was continued: "Entangling Alliances," by Wortley F. Rudd. (To be published.)

R. A. Lyman commended the paper and stated that every one engaged in pharmacy had been troubled with the problems touched upon in the paper—that it presented problems that for 27 years had been discussed in an effort to work out some solution.

"The Green River Anti-Peddling Bill" was presented by F. C. Felter.

In discussing the bill, Mr. Felter added, that in California they organized retail merchants and housewives and had legislation passed but later it was attacked by attorneys representing the various vending companies and that the Fuller Brush Company attempted to bring a test case.

The merchants were able to organize the groups again, however, and the law is still on the statute books of some one hundred cities on the Pacific slope. Mr. Felter stated that he had prepared a sheet of suggestions and information and also an opinion from an attorney which had been sent out, together with copy of the bill, to all retail druggists inquiring for assistance.

C. B. Jordan asked how effective the law had been. The speaker replied that in Santa Cruz their experience was that during the first sixty days something like one hundred peddlers were brought before the court. He stated that they had the Green River bill on their statute books and, accordingly, the peddlers do not bother Santa Cruz. He said that enforcement, of course, is the greatest problem and at the same time, the bill's strongest feature; that its enactment and enforcement depended a great deal upon the coöperation of the housewife for the reason that the city officials have no record of peddling but the merchant's wife, clerks, etc., soon get on to it and when approached, they call the police department and it is not long before the peddler passes the town by.

Mr. Felter mentioned some letters he had received from Mr. Rutherford on the subject which he said were very enlightening and stated that the retail merchants, housewives, etc., should work together for a common purpose.

R. L. Swain inquired if any attempt had been made to pass a state law of this character. The speaker had no knowledge of a state law. The former then stated that a bill of this character had found its way into the legislature of Maryland at different times and that among seven or eight bills endorsed by pharmacists in the legislature, it was the only one that had found its way in and then out (unsuccessful), and cited cases where peddlers would purvey concoctions of small value from door to door at prices of $2.50 to $5.00 a pint or quart, unlabeled. He told of efforts of lobbying companies with the county health officers and boards of hygiene to kill the bill, and stated there seemed no limits to which they did not go.

Mr. Felter stated he felt it was necessary to first get the measure into effect in small towns and municipalities—that any objections of city councils must be overcome and in that way it was not difficult.

Mr. Swain thought the measure a sound one and his idea in bringing up the question of state passage was curiosity to know if any states had been successful in establishing such a law. Mr. Felter cited other cases.

General discussions brought out that medicines and articles of doubtful value and of very low manufacturing cost were sold in house to house canvassing at exorbitant prices.

The next paper, "Presentation of Basic Sciences in Colleges of Pharmacy," was presented by T. C. Daniels, the author. He concluded his paper by stating that he felt we should follow up the basic sciences with proper application when students are prepared for it, but not until then.

Ernest Little stated that he had expressed his idea on the subject quite thoroughly in his address although he felt that Mr. Daniels had gone a step further; he concurred in Mr. Daniels' opinion that with the four-year course, the students have an adequate amount of time, which was not the case with two- or three-year courses.

C. B. Jordan called attention to the method of instruction, citing methods used by C. J. Klemme in making application at the time of teaching the basic sciences and touching upon success with which he had met.

H. B. Carey stated that experience had taught him that an average student has a very moderate capacity and that if he were able to grasp one point at a time on the subject presented, he was doing exceedingly well; that the average student wanted to see the application of that in which he was interested. He would become absorbed in it and lose the point of the reason and basic understanding of the topic. He felt from an educational point of view, the subject should be presented so as to develop the student's idea of reasoning, regardless of application; that if he were able to use his head—could walk alone—that he could take care of himself and that that was the basis of the procedure he recommended.

On motion, duly seconded, the First Session of the Section on Education and Legislation was then adjourned.

SECOND SESSION.

The Second Session of the Section on Education and Legislation was convened August 9th, at 9:00 A.M., by L. Wait Rising.

The chairman announced that none of the authors of the remaining papers were present, they would be read by title, unless there was objection. (Titles of all papers are printed in July JOURNAL, page 593.)

(Minutes of the Joint Session with the Section on Education and Legislation, Conference of Pharmaceutical Law Enforcement Officials and Pharmaceutical Association Secretaries, will be published in the same issue with the proceedings of the Conferences.)

Claire A. Dye stated that a paper by George C. Schicks on "National Unity of State Coöperation between Pharmacists, Physicians and Dentists" had been read by title, and as the author was present, he asked for the reading of the paper. (It will be published in the December number of the JOURNAL.) The paper was read and action taken in accordance with report of the First Session.

H. E. Kendig asked the author whether consideration had been given to the method of raising the money in order to establish such a bureau. The author replied that this had not been gone into. The discussion had brought about a very favorable feeling toward the creation of such a body for laboratory work, special information to pharmacists, etc. The Council had been advised of the action, and the pharmacists throughout the country are desirous for the establishment of such a bureau. It is hoped that the Council will find a way to give needed information, even if the laboratory is not established at once. He knew where the money was coming from in his State—that the medical men were very willing to contribute a part, as they were desirous to keep the bureau going—the medical men are just as eager as the pharmacists.

H. E. Kendig stated that inasmuch as L. W. Rising had a paper among those included by title, he would be interested in hearing it read and the chairman stated that he would give a short résumé of his paper.

The subject dealt with the idea of selling pharmacy to the general public by advertising the profession through the medium of increased apparatus in the prescription department and to make that increased apparatus visible to the public, not an open prescription department but rather adding to the extra equipment that pharmacists do not usually have for prescription and manufacturing purposes. For instance, he thought it would be a good idea for all pharmacists to have a sterilizer of some sort in the prescription department. He stated that it would serve two purposes—it would be an efficient piece of equipment and a good advertising medium as well. He believed the public is impressed when they see a thing of that sort, particularly when it is in operation. He pointed out that beauty shops used displays of scientific-appearing apparatus and that the patrons were impressed by such equipment—would patronize the stores displaying such apparatus more readily than they would one with less efficient equipment. He also called attention to preferability of garages with modern equipment, stating that it created the idea and atmosphere that those garages are progressive. Doctors' offices where shining equipment is displayed create the idea that the office is up-to-date and that he, himself, would have more faith in that doctor than he would in one whose office was not well equipped, although the latter might in reality be a better physician. It was a psychological problem. The pharmacists should invest in equipment and apparatus for manufacturing purposes; have the prescription rooms well equipped to do their manufacturing operations and to place such equipment out where it is feasible to make use of it in some of the minor technical operations of manufacturing. There were two aspects to this suggestion, one a psychological and advertising aspect and the other, a practical side.

H. E. Kendig thought Mr. Rising's idea a splendid one, looking at it from a psychological point of view. He felt that it would establish in the minds of people the idea that there was more to pharmacy than cheap merchandising in the window. It would create a good impression and that it would do as much to establish pharmacy on the scientific basis in the minds of the rank and file of people as the activity of the various pharmacists and the tremendous effort put into Pharmacy Week.

S. J. Hall stated that he had a retail store in which he had an open prescription room and whenever they were doing any distilling, filtering, etc., or anything that would appeal to the public, it was always done in a place where it could be seen.

George C. Schicks believed that when advantage is taken by the pharmacist in having scientific apparatus displayed in his store, he is taking advantage of one of the greatest advertising possibilities that is within his power to obtain. He had seen that work out as he had gone into a professional store equipped in such a manner with apparatus which could be seen readily from the front of the store. Two ladies came in with prescriptions and they looked at this apparatus

and commented that they had never seen that in a drug store before. They had no idea that a pharmacist used that kind of equipment. The pharmacist took a few minutes of his time explaining the action of the sterilization machine and incidentally brought into the conversation other points. He did a good job of selling the scientific part.

S. J. Hall referred to the attractive windows of Frank Nau's pharmacy, stating it was well worth one's while to see them; he had many compliments on his windows, and received recognition at different times in national publications.

A paper not listed on the program was included among the papers of this Section, entitled "Estonian Pharmacy Forges Ahead," by Rudolph Wallner.

E. L. Hammond reported for the Committee on Nominations as follows: C. Leonard O'Connell, *Chairman;* *Vice-Chairman*, G. C. Schicks; *Secretary*, George A. Moulton; *Delegate to House of Delegates*, L. Wait Rising.

Claire A. Dye moved that the report of the Committee on Nominations be received and the Chairman instructed to cast a unanimous ballot of the Section electing the officers nominated. The motion was duly seconded and unanimously carried.

There being no further business before the meeting, the Section was adjourned.

SECTION ON HISTORICAL PHARMACY.

The First Session of the Section on Historical Pharmacy was convened by Chairman C. O. Lee at 2:00 P.M., August 7th. The first order of business was the reading of the Chairman's Address; it follows:

KNOWING THE HISTORY OF ONE'S PROFESSION.

BY C. O. LEE, CHAIRMAN.

It is hard to believe that there is more fascinating reading than that which is to be found in the many interesting books written upon the history of medicine, pharmacy and science. They present a panorama of man in his struggles to move up and out of conditions in which he found himself. In an effort to rid himself of suffering, primitive man tried those things near at hand. Among them were cool leaves, roots and herbs. The story of man's use of, and belief in, all sorts of substances as medicinal agents to relieve pain, is a story that is as old as man himself. It is a fascinating account of human progress.

Sarton says "When one reads the history of science one has the exhilarating feeling of climbing a big mountain" (1). The reading of pharmaceutical history often stimulates the reader but there are also depressing spots in it. In meditating upon the depressing pages of history I have often wondered how progress was at all possible.

Like religion, medicine and pharmacy have survived the influences of terrible superstitition and ignorance. In saying this I do not mean to imply that these retarding influences have all disappeared, for they have not. There is reason to believe, however, that we are much more enlightened upon the subjects of science and religion, notwithstanding the fact that some folks still choose to believe irrational and unwarranted things about either or both.

There are at least two good reasons for studying the history of pharmacy or any other science. One is purely a historical reason, the other for the purpose of understanding the science. If one really knew the history of pharmacy through the ages he could chart a reasonably accurate account of the political and social struggles of civilization through centuries of progress. Then too if pharmacists knew the long and interestingly fascinating history of their chosen profession they would be much prouder of it than the average druggist seems to be.

Not so long ago the writer placed a chart of famous pharmacists and their discoveries before a class in the history of pharmacy. It was pointed out that pharmacists, one hundred and twenty years ago, were discovering the alkaloids and various other important compounds and elements. In discussing the fact that pharmacists are not, in these days, known for their famous discoveries, a member of the class suggested that they are too busy selling cigarettes and soda water. We fear that there is too much truth in the suggestion, a situation which is in serious need of improvement. A knowledge of the history of pharmacy is of prime importance to pharmacists, and scarcely less so to the historian. It would be of great interest and value even to the laity.

In the introduction to "Sixty Centuries of Health and Physic," is to be found the following interesting statement. "In order to understand properly a man, an art, or a science, a knowledge of their development and past history is essential; what embryology is to the study of man's structure and evolution, history is to the comprehension of an art or a science" (2). Following up the suggestion of this quotation we find it hard to reconcile a noble professional past with a present doubtful one. Even so, pharmacy, as we know it to-day, shines through and beyond a lot of commercial trappings as a profession. It is truly a science and an art.

The Section on Historical Pharmacy was organized in 1902 and has held one or two interesting sessions at each of the annual meetings of the ASSOCIATION since then. By a rough count it would appear that about five hundred papers have been presented before the sessions of the Historical Section. They have stimulated much worth-while comment and discussion. A number of the papers have been printed. It is to be regretted that they have not all appeared in print. By the persistent efforts of a few members, devoted to the cause of historical pharmacy, the Section seems, now, to hold a position of wholesome respect and interest in the ASSOCIATION.

The historical accounts that have been presented to the Section have come chiefly from those primarily interested in the subject. There is a certain pleasure to be had in searching for facts and the truth behind them. Instead, however, of depending for our history upon just a few interested individuals we need to do more sowing of the spirit of historical research in our schools and colleges. G. F. Milton has recently said that the writing of history is a science, an art and a profession. He continues by saying, "In its scientific aspect history writing involves the discovery of sources, the appraisal of data, the search for the causes as well as the consequences of events" (3). In the light of such an estimate of history we need to look to our schools for better training in the subject.

In a recent survey of the pharmacy catalogs I was impressed with the meager amount of time allotted to courses in the history of pharmacy. Even more discouraging is the fact that some schools entirely ignore the subject. Our curriculum makers need to be apprised of the importance and value of a study of the history of pharmacy and science. We would do well to heed the following statement by Seelig:—"The opinion of medical educators is unanimous, regarding both the practical and cultural value of the study of the history of medicine" (4). If it is good for medicine and science it is also good for pharmacy.

In taking account of the many interesting books which have appeared in recent years, upon the history of medicine and science, it is to be regretted that pharmacy, in America at least, has not gotten its share of attention by the historical writer. It is our duty to see that this situation is changed in the direction of a more wholesome understanding and respect for a time-honored profession.

During the past year or two your Chairman has been engaged in compiling the doings of the Section, chronologically, into three divisions as follows: (1) The minutes of all the sessions, (2) the resolutions passed upon and (3) the titles of all papers presented before the Section, together with their authors. It must be understood that no claim to absolute accuracy is made in these compilations. They are offered to the historian as a beginning, or as an aid, in the assembling or tabulating of the work of the Section into a more readily available form than we now have.

RECOMMENDATIONS.

Your Chairman wishes to recommend:

(1) That the Historical Section ask for the appointment of a committee of three, to be made in the regular way, whose duty it shall be to study the history of pharmacy courses now being offered in our schools and colleges, giving special attention to the scope, time and contents of such courses, and to bring a report of its findings to our next annual meeting.

(2) That the AMERICAN PHARMACEUTICAL ASSOCIATION, by proper means, classify, edit and publish the papers which have been presented before the Historical Section, in an effort to create interest in the subject of the history of pharmacy and to make more readily available the information contained in the papers which have been presented from time to time.

REFERENCES.

(1) Sarton, G. "History of Science and the New Humanism" (1931).
(2) Stubbs, S. G. B., and Bligh, E. W., "Sixty Centuries of Health and Physic" (1931).

(3) Milton, G. F., "History as a Major Sport," *Sat. Rev. Hist.*, 14, No. 5, page 4 (June 1935).

(4) Seelig, M. G., "Medicine, an Historical Outline" (1931).

(The records prepared by Chairman Lee are comprehensive and valuable and will serve a useful purpose. They represent research which should, as far as possible, be made available.—HISTORIAN.)

The following resolution was approved by the Section.

RESOLUTION FROM HISTORICAL SECTION TO THE HOUSE OF DELEGATES.

It is recommended by Chairman Lee:

(1) That the Historical Section ask for the appointment of a committee of 3, to be made in the regular way, whose duty it shall be to study the history of pharmacy courses, now being offered in our schools and colleges, giving special attention to the scope, time and contents of such courses, and to bring a report of its findings to our next annual meeting.

(2) That the AMERICAN PHARMACEUTICAL ASSOCIATION, by proper means, classify, edit and publish the papers which have been presented before The Historical Section, in an effort to create interest in the subject of the history of pharmacy and to make more readily available the information contained in the papers which have been presented from time to time.

H. W. YOUNGKEN, *Secretary.*

REPORT OF THE SECRETARY.

BY HEBER W. YOUNGKEN.

Your secretary has sent out letters to about 250 members, soliciting papers and, in addition, has seen to it that due notices of the meetings have appeared in the JOURNAL OF THE ASSOCIATION. It is gratifying to note the fine response to his solicitation and especially the varied character of the topics which were selected by the contributors to this year's program of the section.

It has been a genuine pleasure to him to have worked with such helpful and enthusiastic associates as Chairman Lee and Historian Eberle.

The report was accepted.

The Report of the Historian was presented; it follows:

REPORT OF THE HISTORIAN.

BY E. G. EBERLE.

This is an eventful year for pharmacy in Europe and it is unfortunate that American pharmacy is not represented as it should be, partly due to the sudden illness of Charles H. LaWall, a former president of the AMERICAN PHARMACEUTICAL ASSOCIATION, who was named as a delegate to the pharmaceutical meetings in Brussels, and by the U. S. Treasury Department to attend the sessions of the Committee upon Uniform Method of Opium Assay, in Copenhagen, which has been working under the auspices of the Health Committee of the League of Nations since 1931.

The ninth general assembly of the International Pharmaceutical Federation was held in Brussels on July 29th and 30th, and the International Congress of Pharmacy from July 30th to August 6th. The Eighth International Congress of Military Medicine and Pharmacy was convened in Brussels from June 27th to July 3rd. Among the subjects considered at the latter were:

"Principles of Organization and Function of the Medical Service in Mountain Warfare;" "Determination of Aptitude for the Various Specialties in the Medical Services of the Army, Navy and Air Force;" "Sequelæ of Wounds of the Abdomen;" "Researches Concerning Standardizations of Methods of Analysis of Foods and Drinks for the Use of the Soldier;" "Buccal-Dental Prophylaxis at the Front;" "Comparative Study of the Medical Administrative Services of Various Armies, Navies and Air Services."

The following titles indicate the work of the Congress of Pharmacy:

"The Standardization of Œstrin and Male Hormone."

"The Stability of Strophanthin Solution."

"Structural Standards for Crude Drugs."

"Halogen Analogues of Ephedrine and Adrenaline."

"A Critical Study of the Methods of Assay of the Alkaloids in the Official Preparations of Belladonna in the Belgian Pharmacopœia, 1932."

"Research on the Sterilization and Biochemical Control of Pharmaceutical Products."

"Criticisms on the So-called Chemical Reactions of Cannabis Indica."

"The Problem of Unifying Pharmaceutical Nomenclature in an International Pharmacopœia."

Among the subjects that will be considered at the Twelfth International Congress are the following: The medico-pharmaceutical scope, the limitation of pharmacies, pharmaceutical regulations—control of patent medicines and prices to be charged, management of pharmacies, pharmaceutical service in social insurance, the question of employment in pharmacies, pharmaceutical terms.

The King and Queen of Belgium will attend the opening meeting of the pharmaceutical conventions.

Through the courtesy of Major General H. L. Gilchrist, editor of the *Military Surgeon*, the Library of the AMERICAN PHARMACEUTICAL ASSOCIATION has received reports on the Congress of Military Medicine and Pharmacy for 1923, 1925, 1927, 1929, 1931 and 1933. All of the foregoing reports were made by William Seaman Bainbridge, Captain M. C. F., United States Naval Reserve. These meetings were held consecutively in the order given above, in Rome, Paris, Warsaw, London, The Hague and Madrid.

The AMERICAN PHARMACEUTICAL ASSOCIATION in the American Association for the Advancement of Science is a step in progress and is entitled to mention in this report. An interesting program was carried out at the Minneapolis meeting in Section N (Medical Sciences and Section N3 (Pharmacy)). Reference is made to page 328 of the April JOURNAL.

The Pharmacy Exhibit was brought to a close as far as the Chicago World's Fair is concerned and report will be made by Chairman H. C. Christensen, but a mention should be made as part of history.

Esther H. Barney, who so efficiently supervised the exhibit, donated a beautiful framed picture of it in color. Council action will be taken on her valuable services and others who were outstanding in their activities.

In conformity with the general plan of A Century of Progress, the Pharmacy Exhibit was arranged to appeal to the layman, and under the direction of Chairman H. C. Christensen and the committee having the arrangements in charge the exhibit successfully met the test, attracted the interest of the visitors and received general favorable comment from them.

Brazil gave recognition to the Exhibit by presenting the AMERICAN PHARMACEUTICAL ASSOCIATION with a Diploma. The writer does not anticipate Chairman Christensen's report, but the exhibit or part of it will find place in the Museum of Science and Industry, the Rosenwald Museum in Jackson Park, Chicago.

The Stabler-Leadbeater Apothecary Shop, now the property of the AMERICAN PHARMACEUTICAL ASSOCIATION, will be converted into a museum; some work in the restoration has been done, but is only a beginning; the front now gives an idea of the appearance when the founder established the Apothecary Shop.

The interest of collectors in drug jars is shown in the exhibition at the American Art Association—Anderson Galleries of the collection of the late John Wanamaker. The latter display was in the home of Mr. Wanamaker on shelves which have been brought to the Museum; the containers are traced back to the Middle Ages and were made at the great pottery works of that period. By sales these are now at various places and would serve a better purpose if a selection would be permanently exhibited in the Museum of the AMERICAN INSTITUTE OF PHARMACY. A number of articles on mortars have been published in the JOURNAL since the last meeting of the ASSOCIATION.

The *Bulletin de la Societe d'Histoire de la Pharmacie* (France) for March presented a statement from the pharmacy of J. B. Caventou for "LaDame aux Camelias" from the collection of P. Lemay. The bill-head carries the inscription and face of the medal of award by the Royal Institute of France of the grand prize for the discovery of quinine sulphate by Pelletier and Caventou. There is further interest attached because only two of the novels of Dumas, the younger, survived, one of these "LaDame aux Camelias," from which book came the immortal drama by the same title.

Through a grant from the Carnegie Corporation and with the coöperation of the School Art

League, the Folk Arts Museum at Riverdale is open to the public; Mrs. Eli Nadelman is the director. Walter Rendell Storey contributed an illustrated article to the *New York Times Magazine* for April 28th on the museum, in which are ensembles of furnishings, including an early American Pharmacy, with shelves, counters, bottles, jars, some still full of old herbs and drugs. Other types of displays are described.

The Academia Nacional de Medicina of Madrid celebrated recently its second centennial. The festivities included several meetings during the medical week and an exhibition of the books of the library, which has, among other books of great importance, the "Codex scientiæ medicinæ of Avicenna," in five large volumes, and a collection of books written by Hipolito Ruix on American plants, which for more than three centuries were a source of information for botanists and designers from all over the world.

The library of the AMERICAN INSTITUTE OF PHARMACY is developing and members have an opportunity in aiding this service by the donation of books pertaining to pharmacy and allied sciences. The library has rendered service to divisions of the Government and departments have found desired information in its volumes; also individuals and schools. The mails frequently bring requests for information and it is gratifying that in most instances it has been possible to render service.

The History of Science Society held its December meeting in the AMERICAN INSTITUTE OF PHARMACY and for this occasion several show-case displays were arranged of books dealing with the history of pharmacy which attracted the attention of the visitors and interested them. A related effort in display was made when the Round Table Medical Club held its January meeting in the building; a number of changes were made in the display and this was held over for the visit, on February 9th, of Phi Delta Chi delegates, to the conclave in Baltimore, hailing from Massachusetts, New York, Nebraska, Maryland, Ohio, Iowa, Idaho, Kentucky, Colorado, North Carolina, Oklahoma, New Jersey and California.

Dr. C. A. Browne, chief of chemical and technological research of the United States Bureau of Chemistry and Soils, has officially established 1635 as the date of the birth of American chemical work. Then John Winthrop, Jr., founded the industries that are now so vital to national defense and form so large a source of national wealth.

The centennial of graduation from University of Georgia by Crawford W. Long, physician-pharmacist, was celebrated in Athens, March 30th. Many references to him may be found in the JOURNAL; among them: 13, 51 (1924); 15, 317 (1926); 17, 517 (1928).

The 30th annual meeting of the American Association of Museums was held in Washington, D. C., headquarters at the Smithsonian Institution, May 23–25, 1935. The AMERICAN PHARMACEUTICAL ASSOCIATION is listed among the museums in Washington.

Golden anniversaries were celebrated this year by North Dakota Pharmaceutical Association, Chicago Retail Druggists' Association, Tennessee Pharmaceutical Association.

These references could be carried along for many pages, but in this report must be limited, and re-reading of JOURNAL articles will serve for more extended research.

The articles by Lyman F. Kebler and F. W. Nitardy, recently published, emphasize the important part that the AMERICAN PHARMACEUTICAL ASSOCIATION had and has now in Pure Food and Drug Legislation.

A recent Supreme Court decision makes an historical reference to the drug codes. It evidences that the drug industries and pharmacy were eminently successful in the management of the respective offices.

DONATIONS.

The preceding Historian's Report reported earlier donations and items in the JOURNAL speak of others. In an effort of this kind there is a possibility of omitting some that should be mentioned. Thanks are extended to all who favored the Museum and the Library, recognition is given in the JOURNAL and an appeal is made for historical matter and books for the Library. Since last report and not published, the ASSOCIATION has received from Mrs. Harvey W. Wiley a number of books and Pharmacopœial circulars and letters of the years during which Dr. Wiley was president of the Pharmacopœial Convention. The donation by Will of Frederick B. Kilmer is made of record in Council Letters and official action has been taken. A donation for a complete projectoscope has been made by Mr. and Mrs. J. C. Peacock, reported by Council.

IN MEMORIAM.

The following have served pharmacy and record is hereby made of work well done; in memory of the deceased we pause for a moment; among them are: George F. Bigham, W. E. Bingham, Charles M. Blaney, John Blocki, W. L. Cliffe, Charles I. Clough, Edward S. Dawson, Joseph H. Dow, R. G. Eccles, P. J. Garvin, Raymond Hendrickson, E. D. Irvine, Hugo Kantrowitz, H. C. Kassner, Ervin F. Kemp, Ezra J. Kennedy, F. B. Kilmer, Robert R. Lampa, Robert H. Land, Herman A. Metz, Otto Paul Meyer, Willard Ohliger, Roy C. Reese, J. Percy Remington, Van Amburg Sandles, J. P. Schoenthaler, Israel Shurtleff, E. B. Shuttleworth, C. P. VanSchaack, L. S. Williams, Smith C. Wilson. The passing of five faithful State officers was reported in one issue of the JOURNAL, December 1934.

The names are given in alphabetical order; brief notices are printed in the JOURNAL.

Mention is made of the following, because of prominence in pharmacy in other countries or of their relation to pharmacy: A. H. Jenkin, treasurer of the British Pharmaceutical Society; John E. Graff, one of the founders of Rhode Island College of Pharmacy; Dr. Philipp Fischelis, father of the President of the A. PH. A.; Edgar A. Ridgely, president of Indiana Pharmaceutical Association; Hon. Clyde Kelly, friend of pharmacy; Dr. Wilhelm Kolle, director of the State Institute for Experimental Therapy and Chemicotherapy Research Institute, Frankfort; Dr. L. Winkler, president of the Society for the History of Pharmacy and lecturer for History of Pharmacy, University of Innsbruck; Marion Dorset, biochemist; Dr. Hugo DeVries, world-famous botanist.

The report was received for publication.

The following papers were read: "A Brief History of the Drug Code," E. F. Kelly. (Published in September JOURNAL, pages 767–770.) "Pharmacy and a Commemorative Stamp," illustrated by lantern slides, F. A. Delgado. "The First Pharmacist in North America," Theodore J. Bradley. "William Withering and the Introduction of Digitalis into Medical Practice," Louis A. Roddis. "Moses Maimonides, Physician and Author of Medical Works," Louis Gershenfeld. "David Henshaw—from Druggist to Secretary of the Navy," George E. Ewe. "John Marsh, a Medico Pharmaceutical Practitioner on Six Frontiers," Edward Kremers. "Early Drug Stores in Oklahoma," Loyd E. Harris. "The Pharmacopœia of 1880," L. M. Parks. "The Massachusetts Pharmacopœia of 1808," H. Niles. "The Californian Indians, Their Medical Practices and Their Drugs," John Culley. "Estonian Pharmacy," Rudolph Wallner. "Development of Pharmacy in West China," E. N. Meuser. (Published in the October JOURNAL, pages 865–867.)

The Chairman appointed a Committee on Nominations.

SECOND SESSION.

The Second Session of the Section on Historical Pharmacy was convened by Chairman C. O. Lee, August 8th, at 9:00 A.M.

The reading of papers was continued:

The first paper was "State Association Secretaries, arranged in order of service," by J. G. Beard. (Read by title, no discussion.)

The next paper was "Medical Practices of the New England Indians," by Will T. Bradley. (Son of Dean Theodore J. Bradley.)

Theodore J. Bradley said there are two papers on Indian Medicine in the extreme ends of the country—this, and one by John Culley, entitled "The California Indians: Their Medical Practices and Their Drugs."

Mr. Bradley commented on the paper and the research in preparing it. He hoped a paper on Southwestern Indians would be presented next year.

E. H. Niles suggested that these papers should be published in book form.

Several members expressed a hope that these papers would be published in the JOURNAL. Theodore J. Bradley stated that if the paper by Will T. Bradley is not published, he would see to it that it is printed and distributed to those interested in the subject.

Reference was made to the records prepared by Chairman Lee and the valuable information contained in unpublished papers, hence, an effort should be made to publish them for the courses in historical pharmacy.

The papers were accepted.

"Pioneers of Pharmaceutical Education," by E. T. Stuhr, was read by title.

The following papers were read by title: "A History of Dentifrices," Martha E. Faulk. "Apothecary Shops of Colonial Times," Millicent R. LaWall. "Medicine Making as Depicted by Museum Dioramas," Charles Whitebread. "Honoring Age and Service," John E. Kramer. "Report of the Pharmacy Exhibit for 1933 and 1934," H. C. Christensen. "Drugs of the Bible," A. R. Bliss, Jr. "The Ancient Medicinal Uses of Gems and Precious Stones," A. R. Bliss, Jr.

"History of the Dorflinger Show Globes" was presented by R. W. Rodman. The comment by the author is abstracted from the reporter's notes: "I prefer to tell the story than present a formal paper, which I will prepare for the JOURNAL in the form of an article, with illustrations. I have some which I must return and must have them copied to submit with my paper to you. My story is nowhere near as profound as the one just heard from Dean Bradley. It is a very simple story, one which has been of considerable interest to me, and I hope it will be to you.

"There is an old glass factory which is now in decay, that was started by one John Dorflinger in 1852. He set up his first glass works in New England in 1863. Fine glassmaking interrupted his retirement and he set up a small factory which rapidly grew until it consumed a space of over an acre of land. That glass factory grew to be one of the finest glass factories in this country; it made fine glass etchings. The design of the Cuban Palace occupied the full time of twenty glass blowers and etchers to complete that set of dishes. He also made glassware for Royal families in England.

"The great war interrupted the activities in the plant but it was not until after 1921 that the factory was closed. One son bought the entire plant and stock of glassware which was left from the other heirs and decided to set up a small antique glassware shop. One entire section was filled with these beautiful apothecary show globes, at a period in American Pharmacy when the show globe was not enjoying a place in the affections of the people where it finds itself to-day. There was no market for show globes. Consequently, it was a problem what to do with these show globes—pack them up and count them as a loss, or was there something he could do with them? He thought the matter over for a few months before he could devise a plan of realizing any money from them at all. Then he got an idea. He went to New York City to John Wanamaker's and talked with a buyer and interior decorator. They planned together to separate the globes, filling the bottom one with fluid and wiring them for living-room lamps, and the small ones they converted into boudoir lamps. They put them on display and they had a ready appeal to the public, and within six months the entire stock of these gorgeous Dorflinger show globes had been converted into lamps and reached the homes of American families. Shortly after all the show globes had been disposed of, pharmacy had a demand, and druggists who did not have show globes wanted them. Such a demand had been created for them that they were sold to Wanamaker for about a dollar apiece and to-day they cannot be purchased for $50.00 a pair. In the L. S. Williams collection they have a number of these bottles and in the paper which I present to the ASSOCIATION I will have considerable technical material which will enable anyone to identify the Dorflinger show globes."

H. C. Christensen presented a synopsis of a paper entitled "Report of the Pharmacy Exhibit for 1933 and 1934." He had brought a whole book full of historical documents and entitled this Part One of the Pharmacy Exhibit.

Secretary Christensen said his idea was to "carry on" and the report he presented speaks of the origin of the idea and general outline of the plan. Photographs are included with notations on what they represent and their part in the exhibit. There are also included lists of contributors and of the revisions in the pharmaceutical activities represented; also releases sent to the publications at different times for publicity, and a number which carried descriptions of the Fair.

There are photostatic copies of reprints, comments on the exhibit from various papers and especially those of Chicago. There are also included circulars in which the Pharmacy exhibit is mentioned. The exhibit was part of the Medical Science Division in the Hall of Science, where it received recognition on an equal basis with other sciences and the exhibit was pointed to as one of the most interesting and attractive in the Building.

Dr. Eben Carey in charge of the Medical Division included in his description publicity articles sent out relating to the Pharmacy exhibit, and referred to it by saying that the AMERICAN PHARMACEUTICAL ASSOCIATION would show the development of Pharmacy.

The Catalog is included in the Hall of Science in which the Pharmacy exhibit was listed,

with the cut of the exhibit shown in the book, together with an article on it. There are other matters of interest which will be added from time to time.

The Pharmacy exhibit has been included with sixteen other medical science exhibits to be installed permanently in the Museum of Science and Industry in Jackson Park where the 1893 Fair was held.

Mr. Rosenwald, who died several years ago, endowed this institution with about $2,500,000.00 and the city of Chicago voted an equal amount. In that division of the Museum there will be the sixteen medical science groups represented and the privilege is given to add to, from time to time, and make such changes as may be necessary. The set-up will be along the same lines with the historical division. There will be a modern prescription and chemical counter and other exhibits that were shown at the Fair. The arrangement will be somewhat different. There will be included the old Philo Carpenter pharmacy and old utensils will be shown within the log cabin. The Chicago Historical Society has agreed to help with the proposition; they have pictures and plans of the old store and a good many of the things that were in the store.

The original plans of the Exhibit were based on about $50,000.00 but this estimate could not be reached. From the amount collected there is left $596.92, which will be used in the preliminaries of installing the exhibit in the permanent museum. The Museum, however, will take over all the expenses. There will be no charge for space and nothing for the installation. It will be permitted to place, from time to time, other historical material. Some of this may have to be paid for; the amount, therefore, has been left open so that the preliminary expenses can be met. The idea of the Exhibit was first mentioned in the Chicago Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION.

The resolution for preparing the Exhibit was passed at a special meeting by a motion directing that the AMERICAN PHARMACEUTICAL ASSOCIATION have supervision. In 1930, as President, Mr. Christensen appointed delegates for the different national associations and another meeting was held to talk over preliminary plans and purposes and a committee was appointed, of which he was made *chairman* and he was given permission to go ahead with the proposition.

The report up to now is considered as the first part and additional matter can be added to from time to time. The report was accepted.

Being asked whether the report will be published in book form, Mr. Christensen said that perhaps when the report is complete this will be done.

The Museum has between ten and twelve acres of floor space; part of the exhibit material has been temporarily placed, next to the office of the National Association Boards of Pharmacy.

Mr. Christensen said that few realized fully what this exhibit really has meant. It has been recognized on the same basis with those of other sciences and now has been placed or will be placed, permanently, in an institution where the exhibit of Pharmacy will be seen by millions of people. He mentioned that a million and a half of people visited the exhibit, of which there were 110,000 registered pharmacists, physicians and dentists. There were registrants from every state in the Union and from twenty-six foreign countries. There were notables from various foreign countries and it represented a strenuous effort for the Local Committee to make the proposition worth while. He hoped the material may at some time be published in book form.

The report was accepted.

The following papers were read by title: "The Pharmaceutical Museum at the University of Minnesota," F. J. Wulling; "Mandragora," W. H. Blome.

Chairman Lee stated that Secretary Youngken had a paper he would like to present and he was asked to read it.

The secretary stated that the paper had been given to him by the Historian. It represented a rather rare and most valuable contribution to the history of drugs and for that reason it was presented here. Accompanying the paper were two pamphlets concerning the "Badianus Manuscript," an Aztec Herbal "Codex Barberini," Latin 241 (Vatican Library) prepared by Dr. Emily Walcott Emmart of Johns Hopkins University. (The paper is published in the September JOURNAL, pages 771–774. See also October JOURNAL, page 928.) Chairman Lee said, in accepting the paper, that this is an interesting account of pharmaceutical history. He regretted that not more of the authors were present to read their papers.

The report of the Committee on Nominations was presented by Chairman Edward H.

Niles as follows: *Chairman*, H. W. Youngken; *Secretary*, Loyd E. Harris; *Delegate to the House of Delegates*, C. O. Lee; *Historian*, Eugene G. Eberle.

There being no further nominations, the nominees were duly elected by unanimous vote.

Chairman Lee congratulated Chairman-elect Youngken and acknowledged his services as secretary. The latter expressed his appreciation of the work done by the retiring Chairman.

E. H. Niles suggested that all authors present their papers in duplicate.

C. O. Lee suggested that the duplicate copy might be bound in heavy paper and that this copy be used for loan to teachers and others.

Chairman Youngken referred to copies on various subjects prepared by the Department of the Interior.

Reference is here made to the compilations of Resolutions of the Section from the time of its organization and of the Resolutions. The compilations cover many papers and are in the hands of the Historian. The statements relative thereto signed by Chairman Lee follow:

MINUTES, HISTORICAL SECTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, in brief, including recommendations, motions and the titles of papers with the names of the authors, in so far as we have been able to find them.

This work has been done in an effort to assemble, chronologically, the doings of the Section since its organization in 1903 up to and including the 1934 meeting.

It is suggested that these are not without error and should not be accepted as final without being carefully checked and re-edited.

RESOLUTIONS, HISTORICAL SECTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION. These resolutions have been assembled chronologically in an effort to make it easily possible to know the past actions of the section. There are doubtless many errors and omissions. They are offered for whatever value they may serve.

Motion was made and duly seconded that the Section on Historical Pharmacy adjourn.—Carried.

PLANT SCIENCE SEMINAR.

The thirteenth annual meeting of the Plant Science Seminar was held in Portland, Oregon, the week of July 29, 1935. Sessions were held at the North Pacific College of Oregon with Chairman Frank H. Eby presiding. Dean A. O. Mickelsen of the North Pacific College gave the address of welcome.

The regular sessions were devoted to the reading of papers and round table discussions on cultivation of medicinal plants, teaching methods, laboratory technique and other subjects interesting to those engaged in the study of medicinal plants.

The following papers of unusual interest were presented, "An Economical and Safe Apparatus" by Bernard Melkon; "Studies on Phytolacca. I. Morphology of Young Inflorescence" by E. H. MacLaughlin; "The Importance of the Library in Teaching Pharmacognosy" by Frank H. Eby; "The Kilmer Memorial Garden" by Marian S. Dunn; "Digitalis Assay" by E. B. Fischer. Each of these papers was followed by a general discussion.

Professor Ernst T. Stuhr of the Oregon State College, School of Pharmacy, gave a very fine address on Commercial Drug Plantings in Oregon. By means of an excellent set of maps he explained the climatic and soil conditions of the entire state of Oregon. He discussed the cultivation of Cascara, Ginseng, Hydrastis, Mints, Artemisia, Hops and other drug plants. Professor Stuhr stated that Cascara is being cultivated on a very small scale. Ginseng and Hydrastis are cultivated chiefly in the region of Escatada. Digitalis flourishes as a weed through much of the eastern area of the state. Artemisia and the mints are cultivated only in small areas.

Professor E. N. Gathercoal discussed a series of studies which have been conducted on Senega and Poplar Buds in the University of Illinois, School of Pharmacy. A very interesting set of charts, drawings and photomicrographs prepared by Professors E. H. Wirth and P. D. Carpenter were placed on display and discussed by Professor Gathercoal. A model of a section of the wood area of a typical Senega root prepared by Professor Carpenter was the outstanding exhibit of the Seminar.

The field trips of the 1935 Seminar meetings were of unusual interest because of the various

parts of the state which were visited. Trips were made to Portland Parks, the Lambert Gardens and the Leach Gardens. The Leach Gardens, founded by Mr. J. Leach, a retail pharmacist of Portland, were of unusual interest because of the large collection of medicinal plants under cultivation. An extensive collection of trees and shrubs of the northwest were also viewed in this garden.

At Estacada the Seminar members made a tour of the Ginseng and Hydrastis farms. In this region about fifty farms are devoted to the cultivation of these plants on a commercial scale. Representatives of the Ginseng and Hydrastis Growers Association conducted the tour and discussed problems of cultivation and other details of interest.

Two days were devoted to an extensive field trip which carried the members from Portland to Corvallis and return. The trip was made by auto and it covered one of the most beautiful sections of Oregon. The flora of the coast region in the vicinity of Newport was studied as well as that further inland on the coast range. Digitalis was seen flourishing as a weed along the roadside and in fields for many miles west of Corvallis. At Corvallis Dean Ziefle conducted the members on a tour of inspection through the School of Pharmacy of Oregon State College and members of the School of Forestry conducted a tour over the campus of the College. One of the finest collections of Conifers in America was viewed and a number of buildings were inspected including the School of Forestry, the Museum, Student Memorial Building and the Herbarium. A short trip from Corvallis brought the members to the Peavy Arboretum where Cascara and many other interesting plants were seen under cultivation. On the return to Portland the Seminar members passed through the Willamette valley where Mint and Hop farms were inspected.

The closing business session of the Seminar was held at the Multnomah Hotel on Friday evening. F. J. Bacon, Western Reserve University, was elected *President* for 1935–1936. A. W. Matthews, University of Alberta, Edmonton, Canada, was elected *Vice-President* and E. H. Wirth, University of Illinois, 701 So. Wood St., Chicago, Ill., was elected *Secretary-Treasurer*. Professor Frank H. Eby and Dean Wm. B. Day were appointed members of the Executive Committee. Resolutions were unanimously adopted expressing the thanks of the Seminar to A. O. Mickelsen and E. T. Stuhr for their coöperation in arranging details of the program which proved to be one of the most instructive and valuable in the history of the organization.

The following members and visitors were in attendance at the thirteenth annual meeting of the Plant Science Seminar: Charles F. Mollett, Mrs. C. F. Mollett, E. N. Gathercoal, Mrs. E. N. Gathercoal, Frank H. Eby, Mrs. Frank H. Eby, F. Hobart Eby, F. A. Gilfillan, L. C. Britt, Wm. B. Day, Mrs. W. B. Day, A. Ziefle, Marin S. Dunn, Mrs. M. S. Dunn, J. Nichols, Mrs. J. Nichols, John Seybert, Mrs. J. Seybert, E. B. Fischer, Mrs. E. B. Fischer, A. W. Matthews, A. O. Mickelsen, Ernst T. Stuhr, Mrs. E. T. Stuhr, H. V. Arny, Mrs. H. V. Arny and Mr. McMurray.

Plans for the 1936 sessions will be announced at a later date.

COMMITTEE REPORTS*

REPORT OF THE COMMITTEE ON HORTICULTURAL NOMENCLATURE.

Substantial progress has been made by this committee upon the list of names of drugs, spices and medicinal and dye plants which it is compiling for inclusion in the second edition of Standardized Plant Names. Your chairman has sent out copies of lists compiled from the U. S. P., N. F. and Part II of the U. S. D. to Committeemen Gathercoal and Ballard for further checking and decision upon the names of items appearing in these works which are to be included in the ASSOCIATION List.

The list, when compieted will contain a single name for every vegetable drug, spice or dye, a single botanical name for each plant yielding these and a single synonym for every item for which a common name has been employed.

Our next task will be that of studying the names on wholesalers' lists of drugs, spices and dyes, and including such as are not represented in the present lists.

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* For action, see Abstract of Minutes, House of Delegates, pages 911 and 912, October JOURNAL.

Some expense will be entailed for postage and secretarial assistance during the completion of the work. Accordingly we recommend that an appropriation of $20.00 be set aside for the use of this committee in completing the work on the ASSOCIATION List—(see October JOURNAL, page 911).

(Signed) C. W. BALLARD, E. N. GATHERCOAL, H. W. YOUNGKEN, *Chairman.*

REPORT OF COMMITTEE ON WEIGHTS AND MEASURES.*

Since the Committee on Weights and Measures began a survey to find out the accuracy of the scales, weights and measures used in drug stores and reported their findings at our last meeting, it appeared logical for the committee this year to continue along the same lines. The material previously collected was at the disposal of the committee and inquiries were again directed to the various state agencies, with special attention to those states not previously reporting to find out what supervision was exercised and the findings concerning the number of scales and weights examined, passed, adjusted and condemned wherever it was possible to obtain this information.

Six states, Colorado, Georgia, Idaho, Rhode Island, South Carolina, West Virginia, gave no response to our efforts and there is nothing in the material previously collected to throw any light upon the situation that may exist in these states.

Twenty-four states exercise practically no supervision or control of pharmacists' scales and weights. Of this number, Arkansas, Florida, Louisiana, Mississippi, Missouri and Oklahoma have no departments of weights and measures and evidently there is no provision by law whereby any existing state agency may supervise, although in Oklahoma the University does somewhat. Alabama and Oregon have made provision for inspection and testing and will do so hereafter. In New Hampshire, North Carolina and Utah testing is done upon request or complaint only. In Maryland and Virginia, the cities of Baltimore and Richmond exercise control. In New Mexico it is the duty of the local sheriffs to test scales. Illinois and Nevada report lack of personnel which satisfactory supervision requires and Minnesota has discontinued this work because of lack of funds. In Indiana, Kentucky, Montana, North Dakota, Ohio, Texas, Washington and Wyoming the departments of weights and measures are inactive without any reasons given.

Eighteen states and the District of Columbia report satisfactory supervision under existing laws by Boards of Health, Departments of Agriculture or Weights and Measures Departments but no separate record was kept or supplied for the testing of pharmacists' scales as a class in the states of Arizona, California, Connecticut, Delaware, Iowa, Kansas, Maine, New York, South Dakota, Tennessee, Vermont and Wisconsin. In Massachusetts, it is compulsory to have weighing and measuring equipment tested. Vermont laws provide specifications for two classes of drug scales and tolerances for each class. Massachusetts, Michigan, Nebraska, New Jersey, Pennsylvania and the District of Columbia supplied information concerning the number of scales and weights tested, number found correct, number adjusted and number condemned as follows:

Massachusetts—1790 scales approved, 78 condemned; 30,203 weights approved, 393 adjusted; 552 condemned.

Michigan—2516 scales approved, 44 condemned; 21,480 weights approved, 1138 condemned; 7623 graduates approved, 29 condemned.

Nebraska—667 scales approved, none condemned.

New Jersey—844 scales approved, 15 adjusted, 20 condemned; 20,475 weights approved, 1137 adjusted, 1862 condemned.

Pennsylvania—163 scales approved, 14 condemned; 279 weights approved, 22 adjusted, 21 condemned.

District of Columbia—350 scales approved, 48 adjusted, 16 condemned; 6940 weights approved, 92 condemned and confiscated.

Comments from these states indicate conditions are improving with regular inspection being done, but according to the present record 3 per cent of the scales examined were unfit and 1 per cent required adjusting, while 4½ per cent of the weights were unfit and 2 per cent required adjusting. If this percentage of these important devices is inaccurate in states where constant supervision is exercised, conditions generally as to pharmacists' scales and weights must be very bad, especially in those thirty states that do not concern themselves about it.

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* See October JOURNAL, page 911.

There is evidenced in the survey thus far an apparent lack of interest or failure to evaluate properly the importance of the pharmacists' weighing devices by the departments in some states which are charged with supervision over weights and measures. The testing of weights and measures in pharmacies should and could be best done by Boards of Pharmacy or Boards of Health, but it is eminently of first importance that it be done by any state agency rather than be left undone. It is suggested that the attention of the various Boards of Pharmacy be directed to the unhealthy situation which prevails and that more emphasis be placed upon the importance of standard equipment to insure accuracy in compounding and dispensing. The importance of and necessity for this is well established and it is desired that the proper state agencies be awakened to their responsibilities.

It is recommended that the incoming committee continue this survey work in order to show what progress is being made and to provide more facts and figures pertaining thereto. (Signed) R. P. FISCHELIS, W. MAC CHILDS, ROWLAND JONES, H. W. PARKER, CHAS. S. PIERCE, P. H. COSTELLO, *Chairman*.

REPORT OF THE COMMITTEE ON WILLIAM PROCTER, JR., MEMORIAL FUND.

The Committee on the William Procter, Jr., Memorial is pleased to report that the new model for the statue which will be placed in the foyer of the AMERICAN PHARMACEUTICAL ASSOCIATION Headquarters Building in Washington has been approved by a majority vote of its members.

To be more precise the recent canvass on the submitted photographs of this model shows ten unqualified votes for the acceptance of the sketch and one vote that suggested a minor change in the design; and as soon as the sculptor returns from vacation this will have our immediate attention, and the architect will be asked to give suggestions for the base of the statue.

Until now, the work of this Committee has been conducted without the expenditure of any funds that were collected for this memorial and while we regret the unavoidable delays that we have encountered, every member of your committee realizes that each delay will prove to be an advantage for the completed work.

The Committee hopes to make arrangements for the early casting of the statue and believes that its emplacement will be an addition to the Headquarters Building and a graceful tribute to "The Father of American Pharmacy."—See October JOURNAL, page 911.

(Signed) JAMES E. HANCOCK, *Chairman*.

REPORT NATIONAL PHARMACY WEEK EXECUTIVE COMMITTEE.*

The eleventh annual observance of the National Pharmacy Week movement will be held during the week of October 21st. The date has been changed from that of former years so as to permit Colleges of Pharmacy greater opportunity to participate in the activities of Pharmacy Week. During the course of the past years many Colleges of Pharmacy have conducted "Open House" during Pharmacy Week, thus permitting the students from other departments, the Faculty and members of the laity an opportunity of noting through the agency of demonstrations and lectures, the many advances that are being made in American Pharmacy.

This is a splendid manner in which to tell the story of Pharmacy, for at the present time our Colleges are well equipped and have many things of interest to set forth by means of demonstrations. From conversations with those who have assisted in the "Open House" events it is quite evident that the laity have but a slight appreciation of the fine work being accomplished by our Colleges of Pharmacy.

The Colleges of Pharmacy that maintain medicinal plant gardens are fortunate in that many specimens of medicinal plants can be shown on these occasions through the agency of one or more types of professional displays.

It is hoped that our Colleges of Pharmacy will coöperate to the fullest possible extent during the eleventh annual observance of Pharmacy Week. Members of the Faculty should arrange at once for the presentation of talks before various community organizations as well as for radio talks. A number of Colleges of Pharmacy have likewise been of material assistance to retail pharmacists relative to suggestions and materials for professional window displays. Certain Colleges of Pharmacy have arranged for truly worth-while professional Pharmacy displays in the

* See page 911, October JOURNAL. See also page 257, April JOURNAL.

city library as well as in windows of leading stores in the town. Here is an excellent medium for a College of Pharmacy to tell its story to the residents of the community. The National Pharmacy Week Executive Committee urges the Deans and their Associates, as well as the members of the student body, to take an active and leading interest in the work of the National Pharmacy Week movement. When supported by educational institutions, the movement takes on a deeper significance than a movement in which they are not duly represented.

National Pharmacy Week Window Display Contest.—As in former years there will be conducted another National Pharmacy Week Window Display Contest. The judges for this contest will be appointed by the National Pharmacy Week Executive Committee from the City of Cincinnati, the city in which the 1935 Convention of the National Association of Retail Druggists will be held. The judges will be appointed from a list of leading personages in the Drug Trade Industry of that city and will include a representation of the scholastic world, manufacturers, wholesalers, editorial field and of course retail pharmacists.

Robert J. Ruth Memorial Trophy.—Secretary Lee Williamson, of the Federal Wholesale Druggists' Association, has informed the chairman of the National Pharmacy Week Executive Committee that his association will again donate a beautiful silver loving cup which has been designated as the Robert J. Ruth Memorial Trophy, thus honoring the founder of the Pharmacy Week movement.

To date this beautiful trophy has been awarded to the following for the best professional window display in the years as designated:

1931, Haussman Pharmacy, Philadelphia, Pa.
1932, John O'Brien Drug Company, Omaha, Nebraska.
1933, Sisson Drugs, Inc., Chicago, Ill.
1934, Apothecaries Hall, New Haven, Conn.

Kindly bear in mind that this beautiful trophy becomes the permanent possession of the winner each year. There seems to be some misunderstanding on this point, notwithstanding that the pharmaceutical press has made frequent mention of same.

State and Local Prizes.—In addition to the Grand Prize, numerous prizes are likewise offered by state and local organizations, which in the majority of cases likewise become the permanent possession of the winner.

Honorable Mention Certificates.—Ten honorable mention certificates will be awarded jointly by the AMERICAN PHARMACEUTICAL ASSOCIATION and the National Association of Retail Druggists for the next best ten professional window displays in the National Pharmacy Week Window Display Contest, thus affording a greater number an opportunity to share in the national awards.

Pharmacy Week Maps.—The National Wholesale Druggists' Association has a number of the medicinal plant maps of the United States as well as maps featuring the work of our Colleges of Pharmacy on hand. These are prepared under the direction of Dr. E. L. Newcomb and associates and should find ready acceptance on the part of retail pharmacists for professional window displays as well as for gifts to be presented to local educational institutions. Departments of Biology, Botany and other departments of educational institutions will gladly welcome receiving a copy of these maps. Retail pharmacists are urged to place an order for these maps through their service wholesaler. Many retail pharmacists have presented copies of them to educational institutions and the reaction has been most favorable.

The Pharmaceutical Press.—The pharmaceutical press has given the National Pharmacy Week movement splendid support to date. A number of these journals edit special Pharmacy Week numbers that are a real credit to the profession of Pharmacy. It is hoped that this splendid support will be continued in the future and that we may be privileged to receive 1935 special Pharmacy Week editions of these journals.

Editors of pharmaceutical journals are always face to face with the problem of securing worth-while articles for publication. The National Pharmacy Week Executive Committee urges all those who are in a position to write interesting articles, to coöperate with the pharmaceutical press to the fullest possible extent.

Perhaps you are acquainted with some interesting phase of Pharmacy that as yet has not appeared in print. It would be a splendid thing if you would pause in the rush of your busy lives to express these things in writing, and then submit them to the pharmaceutical press. To date

there has appeared a résumé of Famous Discoveries by Famous Pharmacists. This list is far from complete. If you are in possession of additional facts, will you make it a point to send same to the pharmaceutical press or to the chairman of the National Pharmacy Week Executive Committee?

Pharmacy Week Bulletins.—Owing to the fact that the chairman of the National Pharmacy Week Executive Committee was confined to his home for a period of two months this summer on account of illness, there has been a delay in sending out the first of a series of *Pharmacy Week Bulletins* to the pharmaceutical press, to members of the Committee as well as to coöperating groups. Two bulletins have just been completed and should be in the mail before August 1st. The first bulletin deals with a general report while the second deals with the subject of professional window displays. Many suggested titles for professional window displays have been set forth in the second bulletin. Additional bulletins will be prepared during the course of the next month or so and which will receive wide distribution.

Finances.—The present fund as made possible through the AMERICAN PHARMACEUTICAL ASSOCIATION and the National Association of Retail Druggists amounting to $250.00 per year per association is far from a satisfactory amount. Many persons in the Drug Trade Industry may wonder at times why the National Pharmacy Week Executive Committee does not prepare additional materials for distribution than have gone forward in the past. When one takes into consideration the cost of mimeographing, printing and mailing, the sum of $500.00 is soon expended. The National Pharmacy Week Executive Committee expended $498.00 during the past year and owing to lack of money was unable to comply with nearly 500 additional requests for Pharmacy Week stories.

The condition is somewhat more troublesome in light of the fact that the chairman of the National Pharmacy Week Executive Committee failed to receive one donation of $250.00. It has been necessary to curtail expenses along the line to make up this deficit as well as to make up the deficit that the chairman encountered when first assuming the office.

The National Pharmacy Week Executive Committee recommends that some plan be worked out whereby the Committee will have at least $1000.00 per year for the work of the National Pharmacy Week movement.

Additional Support Needed.—During the course of the past few years the National Pharmacy Week Executive Committee has mailed out thousands of copies of human-interest appeal stories to those requesting same. Last year some 20 different stories were prepared in mimeograph form and which were greatly appreciated as evidenced by the extra demands for same as well as comments as received from those who made use of them. Hundreds of retail pharmacists utilized these stories for presentation before various community organizations. Pharmaceutical educators have embodied a considerable portion of these talks in their lectures during the course of the year.

The Chairman of the National Pharmacy Week Executive Committee has personally prepared a number of these stories for distribution. Requests for additional stories have gone forth to the pharmaceutical educators and others associated with the Profession of Pharmacy, but the support received was far less than had been anticipated. During the course of one year but one educator, a Dean of one of our Colleges of Pharmacy, responded.

No doubt pharmaceutical educators have on hand copies of talks they have presented to various community groups as well as having copies of radio talks on hand. The National Pharmacy Week Executive Committee gladly welcomes material of this kind and trusts that greater support will be forthcoming in the future.

Value of National Pharmacy Week.—It is quite evident that the National Pharmacy Week movement represents an innovation that should be continued in the future. It has been a means of bringing the message of Pharmacy to the public as well as a means of encouraging retail pharmacists and others to greater professional activities, such as perhaps has not been accomplished by any other movement in the history of Pharmacy. It is quite evident that a movement of this kind is essential to the development of the profession of Pharmacy. The National Pharmacy Week movement has been kept within professional bounds and many suggestions have been studied and finally vetoed, so that the movement would not become commercialized.

Future Developments.—During the course of the past four years the Chairman of the National Pharmacy Week Committee has consulted many individuals of the Drug Trade Industry concerning the future development of the movement. Several suggested plans have been worked

out but have not been put into effect, due to the lack of finances. It is quite evident that certain changes should be made in the movement, for it has continued over a period of ten years more or less on the original setup.

The next decade should witness many interesting developments, for there is much that can be accomplished provided funds are made available to carry on this work. No attempt will be made in this report to outline the suggested activities. The National Pharmacy Week Executive Committee will await such a time when a larger annual fund has been made available, before attempting to reshape the structure of the movement.

The response to the movement on the part of retail pharmacists in connection with professional window displays during the past year was most encouraging, in fact, reports indicate that a greater activity took place last year than in a few years previous. This would appear to be indicative of the fact that pharmacists are awakening to the potential possibilities in the professional field and are giving concrete expression to these thoughts on their part by developing interesting professional window displays.

American Pharmaceutical Association	National Association of Retail Druggists	
Anton Hogstad, Jr.	A. V. Burdine	Benjamin Cohen
Edward Spease	James P. Crowley	Jos. H. Rosenthal
John H. Hoagland	J. J. Gillespie	Fred G. Kustermann
John O'Brien	Wm. B. Zubrod	Roy F. Perry
Roy Warnack	Clare F. Allan	Ambrose Hunsberger
L. M. Kantner		
E. J. Ireland		

REPORT OF THE COMMITTEE ON TRANSPORTATION.

Portland, Oregon
August 7, 1935.

The work of the Committee on Transportation has been easier during the past year than it has been in some years because the summer tourist rates to Portland are lower than the convention rates from most sections of the country, and it was not necessary or feasible to use the certificate plan for the meeting.

The work of the Committee on Transportation, however, includes a great deal of correspondence with the railroads, and the chairman must give considerable time to interviews with representatives of the various roads. It has been our policy to secure information about the available routes and rates to the Convention City, and to distribute this information to the members, leaving each member free to choose the route which suits him best. Acting on this policy studies were made of the many possible routes to Portland from different parts of the country, and summaries of the results of this study were published in notices appearing in three numbers of the JOURNAL; also many circulars giving information about routes were sent to two members by the local committee and by various transportation systems.

An efficient Committee on Transportation is an essential part of an organization like ours and the members of the present committee have tried to do their part to help insure the success of the meeting (see page 912, October JOURNAL).

(Signed) T. J. BRADLEY, *Chairman*.

LEASE OF "DRY ICE" WELL.

Harold L. Ickes, Secretary of the Interior, has signed the first lease in American history for the operation of a "dry ice" well. The well produces almost pure carbon dioxide and is located in Carbon County, Utah. The well was first drilled in January 1924, showing a gas content under terrific pressure of more than 98 per cent pure carbon dioxide. At that time there was no known means of utilizing the gas, except locally, so that the well was plugged and temporarily abandoned.

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and Branches shall become the property of the Association with the understanding that they are not to be published in any other publication prior to their publication in those of the Association, except with the consent of the Council." —Part of Chapter VI, Article VI of the By-Laws.

ARTICLE III of Chapter VII reads: "The objects and aims of local branches of this Association shall be the same as set forth in ARTICLE I of the Constitution of this body, *and the acts of local branches shall in no way commit or bind this Association, and can only serve as recommendations to it.* And no local branch shall enact any article of Constitution or By-Law to conflict with the Constitution or By-Laws of this Association."

ARTICLE IV of Chapter VII reads: "Each local branch having not less than 50 dues-paid members of the Association, holding not less than six meetings annually with an attendance of not less than 9 members at each meeting, and the proceedings of which shall have been submitted to the JOURNAL for publication, may elect one representative to the House of Delegates."

Reports of the meeting of the Local Branches shall be mailed to the Editor on the day following the meeting, if possible. Minutes should be typewritten with wide spaces between the lines. Care should be taken to give proper names correctly and manuscript should be signed by the reporter. *Please advise us of changes in Roster and mail reports promptly.*

BALTIMORE.

The October meeting of the Baltimore Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held at the Hotel Emerson on Thursday, October 31. President Reindollar was in the Chair.

The minutes of the last meeting, held in April 1935, were called for and read by the Secretary. President Reindollar then introduced Secretary E. F. Kelly, of the AMERICAN PHARMACEUTICAL ASSOCIATION, who, representing the chariman of the Scientific Section, was to present the Ebert Prize for 1935 to Marvin J. Andrews of the School of Pharmacy of the University of Maryland. Dr. Kelly mentioned the foundation of the award from the legacy of the late Dr. Albert Ebert, how the first award had been made in 1874 and that thirty-nine awards had been made since that date. He elaborated on the work of the recipient in regard to the margin of permissible error in prescriptions and the importance of studies of this type. Dr. Kelly expressed the best wishes of Dr. Fischelis to the Baltimore Branch members and to Mr. Andrews. The presentation of the medal followed.

President Reindollar introduced the speaker of the evening, Dr. David M. R. Culbreth, Emeritus Professor of Materia Medica of the School of Pharmacy, University of Maryland. Dr. Culbreth, it was pointed out, has been a member of the AMERICAN PHARMACEUTICAL ASSOCIATION for a half century and present at the meeting were four generations of pharmacists. Dr. Culbreth selected for his topic, "How can a person be satisfied and contented while making a living and a reserve for old age in the retail Drug Business?"

The speaker delivered a scholarly address concerning his early experiences in the retail drug business, and how in his experience the young pharmacist of to-day should plan his life's work. Dr. Culbreth mentioned the value of a thorough pharmaceutical training both theoretical and practical, and how the health of the individual should be carefully guarded as should his savings.

President Reindollar said it was a rare pleasure to hear the experiences of this master pharmacist and the Baltimore Branch took great pride in counting him a member. A rising vote of thanks was tendered Dr. Culbreth. About twenty-five attended the meeting.

C. JELLEFF CARR, *Secretary-Treasurer.*

CHICAGO.

The first meeting of the Chicago Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held Tuesday evening, October 22nd, at the University of Illinois College of Pharmacy. The meeting was called to order by President Morrison.

The first speaker of the evening was Lawrence Templeton who told of "The A. PH. A. Convention in Portland, Oregon, and of Pharmacy, Cascara and Salmon in Oregon."

He told of many happenings at the convention of other than a scientific nature and referred the assembly to the August issue of the JOURNAL for the scientific and business matters transacted at the convention.

Mr. Templeton spoke as one making his first attendance at a national convention of the ASSOCIATION and made a very flattering report of the value of attending these yearly meetings and urged more of the members of the Chicago Branch to arrange their summer vacations so that they could attend the next meeting in Dallas, Texas.

A very interesting discussion was given of the retail drug conditions on the Pacific Coast and of a visit to the first and largest Cascara Farm on the coast, which is located near Brownsville, Oregon. Mr. Templeton, a native Oregonian, gave a story of the habits of the salmon during their trek up the fresh-water streams to their spawning grounds.

Pictures, pamphlets, newspaper items, cascara berries and other miscellaneous items were passed around to enliven the discussion.

The second speaker of the evening, Mr. Shkolnik, spoke of "Current Topics at the N. A. R. D. Convention in Cincinnati." He first told of the social happenings at the convention and led us to believe that the Chicago delegation was well taken care of in that respect.

A report was given of activities on Fair Trade bills. Figures were presented to show the comparative sales, profits and wages paid between the chain stores and the independent stores during the past few years. The report was all in favor of the chain store having the advantage and constantly gaining a greater advantage.

The speaker presented his own ideas in regard to the Fair Trade bills and looked upon it as an injustice to the public to pass bills restraining price competition. His view of the matter was to pass legislation that would stop unfair price discrimination between the small retailer and the large organization. True, a car-load of merchandise should be purchased for less per unit, but no less than the difference between the cost of handling the units in car-load lots and one-twelfth of a dozen or one-quarter of a dozen. With this system in practice Mr. Shkolnik averred that we would not need laws restraining price cutting below cost as the price of an item on the retailer's shelf would be the same to all and that very few retailers, large or small, would continue to sell at cost or at a sale price that is in many cases below the wholesale price of the independent retailer.

The numerous questions propounded by the large gathering testified as to their interest in the discussions of the evening.

L. TEMPLETON, *Secretary-Treasurer.*

NEW YORK.

The October meeting of the New York Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held October 14th, in the College of Pharmacy, Columbia University. About seventy members and their guests attended.

The meeting was called to order by President Charles W. Ballard. The secretary read his report, which was approved.

Treasurer Currens read his report, it was accepted.

Chairman Lehman, of the Committee on Education and Legislation, submitted the following report:

National Legislation.—Congress having adjourned, without enacting the two bills of great interest to pharmacy, namely the Copeland Pure Food and Drug Law, (S. 5) and the Patman Bill (H. R. 8442) those favoring the enactment or the rejection of these two measures are continuing their agitation for or against the same. In the matter of the Patman Bill, which provides for equal treatment for all distributors, great or small, much activity is shown in independent retail circles. All discounts and allowances, in any quantity, are to be the same for the small purchaser, as well as the large one.

Congressional investigation of this measure has created quite a sensation, for it has shown that some of the great distributors had received special discounts, bonuses and advertising allowances from many of the manufacturers of nationally advertised merchandise. This bill is endorsed by the Federal Wholesale Druggists' Association and the National Association of Retail Druggists.

Demands for a national law against unfair competition are being voiced by associations of retail merchants all over the country, and an attempt to enact a Fair Trade Law, similar to the

Capper-Kelly Bill, so long before Congress, or the various State fair trade laws that have been passed during the year, will be pushed vigorously during the coming session of Congress.

Toilet preparations are subject to a 10% Federal tax: they include: non-official lotions such as Rose-Water and Glycerine, and returns to the Collector of Internal Revenue must be made if the pharmacist mixes the same for his customer. Hair-fixing lotions are among the taxable items (also known as wave setters).

Retail pharmacists must see that their stock of liquors, alcohol and tincture of Jamaica Ginger are in stamped containers, even though the preparations are used only in compounding prescriptions; violations of this rule may subject them to penalties.

In regard to State Fair Trade Laws: The Superior Court of California recently held that the California Fair Trade Law does not violate the Sherman Act. Decision rendered in the case of the Emerson Drug Co. *vs.* Weinstein Co. In New York State many manufacturers of nationally advertised drug items have submitted contracts that have been approved by the New York State Pharmaceutical Association's Fair Trade Committee: about thirty-five in all. However, many of the larger concerns have failed to do so, and much impatience and concern has been prevalent in various sections of the state. A number of mass meetings have been called, especially in Buffalo, Rochester, Syracuse and Brooklyn, to protest against the delay in offering contracts, and in consequence, several more were issued. A mass meeting in New York City, including the Metropolitan District, was held on October 28th.

A meeting of retailers with manufacturers was held on October 7th, under the auspices of the Board of Directors of the New York Pharmaceutical Council and the presidents of the various constituent associations.

Any pharmacist who manufactures his own private formula or has manufactured for him, medicinal or cosmetic preparations, may have to pay $25.00 for the registration of each one for the first year and $10.00 every year thereafter if the New York Board of Health adopts the proposed amendment to the Sanitary Code. Also disclosure of formulas, registration of labels, advertising matter and submitting of samples are contemplated under the amendment; the matter is in the hands of the Legislative Committee of the New York Pharmaceutical Council: a meeting was held with the Health Commissioner, and a hearing has been set for December 2, 1935.

Auditor Bilhuber reported that the accounts had been checked and everything had been found in perfect order.

Delegate Hugo Schaefer, to the House of Delegates, for the New York Branch, submitted a report on impressions gathered at the ASSOCIATION convention held at Portland.

He reported that the meeting had been very well attended and that it was a very successful meeting. He discussed the resolutions which had been presented by President R. P. Fischelis, of the ASSOCIATION and pointed out that the Committee on Resolutions had acted liberally. Many of the proposals made by President Fischelis were passed and it was plain that the majority of the delegates were in sympathy with his suggestions. The resolution introduced by the New York Branch, relative to providing a rebate from the AMERICAN PHARMACEUTICAL ASSOCIATION to each branch for every ASSOCIATION member within its district was referred to the Council since it involved fiscal matters. The feeling was prevalent that the proposal was well received and would in all probability be acted upon favorably.

The Copeland S. 5 Bill was approved by the ASSOCIATION.

P. H. Costello was installed as the president of the ASSOCIATION.

Dr. Schaefer also reported that the other groups meeting at the time of the A. PH. A. convention enjoyed a good attendance and that the scientific part of the convention had yielded a very large number of papers.

Samuel C. Henry, New York Branch delegate to the New York Pharmaceutical Council, reported that he had attended all meetings both regular and special since his appointment and he thanked the Branch for this opportunity to serve. He explained that the Council was doing good work in dealing with the problems of the retailer. The new Fair Trade Code had been widely and thoroughly discussed and some anxiety existed over the failure of manufacturers to submit contracts and failure of retail druggists to sign approved contracts. A similar kind of law is now operating in nine states of the union. Mr. Henry urged retailers to lose no time in signing approved contracts. He also reported that wholesalers had been asked by retailers to coöperate in eliminating the number of new drug stores. It was felt that a new store should not be opened

until a real need for the service existed. He called attention to the special meeting to be held on October 28th, in order to arouse interest of the retailers in signing approved Fair Trade contracts. Another point discussed at Council meetings was the lack of funds available to officials for the enforcement of the State Narcotic Law.

President Ballard thanked Mr. Henry for his report and called upon Chairman Steiger, of the Progress of Pharmacy Committee, who submitted the following report:

The most important items in regard to the progress of pharmacy are, of course, those in the report of our delegate to the Portland meeting.

Our "Pharmaceutical Abstracts" cannot be omitted in any discussion of the progress of pharmacy. In a few short months these abstracts have assumed an important place in the literature of scientific pharmacy. It has become difficult for your committee to make their report without duplicating the work of the abstracters.

An interesting article on odors and the sense of smell appears in the October *Industrial and Engineering Chemistry* ("Seeking a Working Language for Odors and Flavors," E. C. Crocker). Of this article the editors say, "Odors can be detected in lower concentrations by the nose than any other characteristic by almost any other instrument," according to Crocker: yet, because no satisfactory method of description and record of the sensations of smell exist, the value of this extremely sensitive instrument is practically neglected. Pleading for the better development of our language descriptive of odor characteristics, Crocker reviews what has been done in this field and emphasizes the value of further work in classifying and evaluating odors.

Drug Topics for September 16th, reports that Parke, Davis & Co. have patented a procedure for manufacturing an effective toxin, an antitoxin and a toxin-antitoxin from meningococcus germs. Merck have patented an improved method of manufacturing and isolating salts of the aliphatic acid esters of choline. Purdue Research Foundation has been assigned the patent of a process for removing impurities from virus preparations by adjustment of hydrogen-ion concentration and subsequent flocculation. Metal capsules containing volatile medicaments suitable for inhalation have been patented. The capsule is made of a low-melting alloy having a melting point below that of boiling water. When the capsule is dropped into hot water it will melt and release the inhalant composition. An Ontario physician is said to have produced products which he terms "Ensols," one of which had arrested the development of Carcinoma. These "Ensols" are produced, he said, by growing harmless proteolytic organisms on protein media which are thereby liquefied. In the liquid produced, he claims, is an active substance which can be separated and sterilized. This has the power of liquefying proteins similar to the base, but has no effect upon the other types of proteins. An ensol produced from a carcinoma base has a specific action on carcinoma tissues, Dr. Connell says.

In their September 30th issue, *Drug Trade News* reports a Squibb patent for the use of a glycol in making pure divinyl ether. Dr. Ruzicka announces that he has synthesized Testosterone from cholesterol. (Androsterone had already been synthesized from cholesterol)—Parke, Davis & Co. have been assigned a patent for producing a pituitary diuretic preparation.

In an article entitled "Nutrition and Vitality" in Parke, Davis & Co's. "Therapeutic Notes" for September, the statement is made that "One cannot read any number of the important medical journals without being impressed by the increasing importance which is attached to the subject of vitamins. These elusive substances which may be accidentally included in or similarly omitted from one's diet and which are so essential to health in many ways, are now the subject of study by a large and growing number of students. At first suspected of being a fad, the study of vitamins now engages the attention not only of dietitians and clinicians, but of biological research workers and chemists."

Under the heading of unfinished business, Dr. Schaeger presented a letter from the office of the Controller of the City of New York. After some discussion, Dr. Bilhuber moved that the letter be filed. This was seconded by Mr. Currens and no further action was taken.

A communication from Robert S. Lehman, signed for the New York State Pharmaceutical Association, was read. This called upon our president to appoint one delegate to be a member of the Committee on Resolutions of the State Association, for its annual convention. The president said that he would announce the appointment at the next meeting.

President Ballard called attention to the arrangements which had been made for the Remington Medal presentation in Washington and opened the whole matter for discussion. In the

discussion, Messrs. Schaefer, Bilhuber, Arny, Rudolf Hauck and Ballard took part. Following the discussion, it was agreed that further arrangements of the details of the Remington Medal presentation be left to the president and the secretary.

Under the heading of new business, Mr. Currens submitted the Branch membership applications of Mr. Stern and Dr. Snyder, together with their remittances. Both gentlemen were elected to Branch membership. Dr. Schaefer submitted the application of Alfred Biamonte for ASSOCIATION membership and directed the secretary to forward this to Washington.

Dr. Schaefer then moved that the Branch mail cards to its members urging the election of Dr. Fischelis as a member of the Council and Dr. Lascoff as vice-president. This motion was seconded and approved.

A member of the Branch arose and discussed the resolutions proposed for the amendment of the Sanitary Code of the City of New York which would require registration of all proprietary remedies and would require every manufacturer to pay a fee of $25.00 for the registration of each item in the City of New York. At the close of his discussion, he moved that the Branch go on record as being opposed to this resolution. The motion was seconded and brought up for discussion.

Dr. Wimmer pointed out that the Branch is a member of the National Pharmaceutical Council and that the purpose of the Council is to represent the united opinion of pharmaceutical organizations in New York City, and that since the Council had already taken steps to combat this new regulation it would be wholly unnecessary and out of place for the Branch to act independently. Dr. Schaefer called attention to essentially the same point that Dr. Wimmer had emphasized. The motion was then withdrawn with the consent of the member who had seconded it. This brought to a close the business part of the meeting.

President Ballard then announced that the topic for the evening was the "Manufacture of Glass." V. F. Hammel, of Whitall, Tatum Co. who had been regularly scheduled to address the Branch, unfortunately could not attend and that Mr. Petid had come in his place; he was then introduced by the president. The speaker's remarks were very brief, his principal presentation being a moving picture film which very thoroughly showed the manufacture of glass and glass products. At the close of the meeting a rising vote of thanks was accorded the speaker and the meeting was adjourned.

RUDOLF O. HAUCK, *Secretary.*

REPORT OF SPECIAL MEETING OF THE NEW YORK BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION HELD ON THE OCCASION OF THE PRESENTATION OF THE REMINGTON MEDAL TO DR. SAMUEL LEWIS HILTON.

The Remington Medal for 1935 was presented to Dr. Samuel L. Hilton at a dinner held in his honor at the Mayflower Hotel, Washington, D. C., on the evening of October 19, 1935.

The dinner was sponsored by the District of Columbia Pharmaceutical Association, the District of Columbia Board of Pharmacy, the District of Columbia Veteran Druggists Association, the faculty of the George Washington School of Pharmacy and the New York Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION.

Dr. Augustus C. Taylor of Washington was chairman of the Committee on Arrangement.

The toastmaster for the evening was Dr. Robert L. Swain and speakers at the dinner included, Dr. Harry A. Fowler of Washington, Prof. E. Fullerton Cook of Philadelphia, Dean T. J. Bradley of Boston, and Secretary E. F. Kelly of Washington.

When the time came for the presentation of the medal, the toastmaster introduced president Charles W. Ballard of the New York Branch who called the meeting to order. A quorum for the New York Branch was assured by the presence of more than a sufficient number of New York Branch members. After some brief introductory remarks he requested Past-President H. V. Arny of the New York Branch to present the medal. In presenting the medal, Dr. Arny stated how pleased the New York Branch was with the fact that so well deserving a person had been awarded the medal and extended the congratulation of the New York Branch to the recipient, who responded.

RUDOLF O. HAUCK, *Secretary.*

NORTHERN NEW JERSEY.

The first Fall meeting of the Northern New Jersey Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held at the Rutgers University College of Pharmacy on October 21st, with President George C. Schicks presiding. More than fifty members and guests attended the meeting.

Dean Ernest Little, *Chairman* of the Membership Committee, outlined his suggested approach to the problem of increasing membership in the ASSOCIATION as described in the JOURNAL for September and his plan was enthusiastically received by the Branch. After several members discussed various features of Dr. Little's suggestions, the Branch voted unanimously to endorse the plan, to adopt as one of its major projects for the year the doubling of its membership by August 1, 1936, and to appropriate sufficient money to present a pennant each year for the next two years to the Branch showing the highest percentage gain in membership during the year.

Chairman John Silsby, of the Committee on Practice of Pharmacy, discussed developments of the last few months in the profession, and Robert W. Rodman, delegate to the AMERICAN PHARMACEUTICAL ASSOCIATION Convention, reported briefly on the Portland meeting.

Chairman Anton Hogstad, Jr., of the Executive Committee of National Pharmacy Week, delivered an excellent address on the subject of "Professional Pharmacy." Dr. Hogstad illustrated his remarks with a series of lantern slides showing outstanding examples of impressive prescription pharmacies and attractive professional window displays.

Dr. Robert Lee Swain, of Baltimore, former president of the AMERICAN PHARMACEUTICAL ASSOCIATION and present chairman of the Committee on Fair Trade Laws for the National Association of Retail Druggists, will address the meeting of the Northern New Jersey Branch to be held on Monday night, November 18th.

C. L. COX, *Secretary.*

NORTHERN OHIO.

The regular monthly meeting of the Northern Ohio Branch, AMERICAN PHARMACEUTICAL ASSOCIATION, was held at The Faculty Club, Western Reserve University, Cleveland, November 8, 1935. This was a dinner meeting and Dr. E. E. Ecker, Associate Professor of Immunology of Western Reserve University School of Medicine, was the guest speaker.

Dr. Ecker delivered a very interesting talk on the relative values of several well-known antiseptics. Considerable new experimental data relating to phenylmercuric nitrate was discussed and charts were presented showing its superiority as a bactericide and fungicide when employed in very high dilution. In cases of tinea and yeast infections of the skin, phenylmercuric nitrate in ointment or lotion form was claimed to be highly efficacious. Further research is being done on this drug which Dr. Ecker believes will have far-reaching influence in changing current professional opinion of some of our widely used antiseptics.

N. T. CHAMBERLIN, *Secretary.*

PHILADELPHIA.

The November meeting of the Philadelphia Branch, AMERICAN PHARMACEUTICAL ASSOCIATION, was held in the Museum of the Philadelphia College of Pharmacy and Science, Tuesday night, November 12th, E. H. MacLaughlin presiding.

The minutes of the October meeting were read and approved.

President MacLaughlin read a communication from the Philadelphia Chamber of Commerce suggesting that the Philadelphia Branch make a bid for the 1937 meeting of the A. PH. A. Ambrose Hunsberger made a motion that the officers of the Branch notify the Committee on Time and Place of the A. PH. A. that the Philadelphia Branch has gone on record as favoring Philadelphia for the 1937 meeting. Motion seconded and carried.

A letter from Dean Little, of Rutgers University, concerning a drive for new members for the parent body in 1936 was read. Mr. Campbell made a motion that Dean Little's proposal of every member get a member in 1936, be given the endorsement of the Philadelphia Branch and that the President appoint a committee of five to help carry out the drive. Motion seconded and so ordered.

Our guest speaker, Secretary E. F. Kelly of the A. PH. A., was introduced. He spoke on Pharmaceutical Progress. He referred to the progress made in Pharmacy, as a profession, during the past 15 years, giving due credit to the work of local and state pharmacists for their coöperation. He evaluated Pharmacy for its progress in Education, Legislative Control and Recognition of Professional Standing. He spoke of its recognition by the Federal Government and praised the standards set by Pharmacy.

Statistics were given to show that Pharmacy, as a profession, was not overcrowded, rather there seems to be an uneven distribution of schools and pharmacists.

The speaker's address was one of the most interesting heard by the Local Branch and it looks forward to hearing from Dr. Kelly again. A rising vote of thanks was given him.

GEORGE E. BYERS, *Secretary*.

NATIONAL PHARMACY WEEK WINDOW DISPLAY CONTEST COMMITTEE.

The following have been appointed to serve on the 1935 National Pharmacy Week Window Display Contest Committee:

Charles F. Henke, Jr., *Chairman*, Registrar, Cincinnati College of Pharmacy, Cincinnati, Ohio; O. C. Reifschneider, president, Ohio Valley Druggists' Association, Cincinnati, Ohio; Bernard J. Kotte, Otto E. Kissner, J. Otto Kohl, retail pharmacists of Cincinnati, Ohio.

This committee will select the winner of the 1935 National Pharmacy Week Window Display Contest from the photographs submitted by the secretaries of the various state pharmaceutical organizations. In addition to the winner, who will be awarded the Federal Wholesale Druggists' Association Robert J. Ruth Memorial Trophy, this committee will select the ten next-best photographs, which will be awarded merit certificates jointly by the AMERICAN PHARMACEUTICAL ASSOCIATION and the National Association of Retail Druggists.

Professor Henke, chairman of the National Pharmacy Week Contest Committee, will report the results of the contest to the chairman of the National Pharmacy Week Executive Committee, who, in turn, will release a bulletin announcing the winners of the 1935 National Pharmacy Week Window Display Contest.

For National Pharmacy Week Executive Committee, see report in this issue, pages 1023–1026.

SECOND EDITION OF PROFESSIONAL PHARMACY.

The first edition of "Professional Pharmacy" has been exhausted and the favorable reception has prompted a revision which has been published. This present edition, which constitutes the first revision, has been prepared in a form particularly suitable for pharmacy schools, in anticipation of a larger use of the publication in the class room. Mr. Delgado has devoted time and study to the revision during the past year and as a result the forthcoming publication contains considerable additional matter. An Appendix includes many questions based upon the text that will aid the instructor and be helpful to the students in gaining an understanding of the problems which develop in pharmaceutical practice and the present conditions surrounding it.

An extended service to retail pharmacists has been kept in mind, therefore, in addition to the questionnaire referred to, the author has added a chapter on prescription pricing schedules and the open-view prescription department has been discussed. There is included a list of 253 Manufacturers' Pharmaceutical Specialties, a list of 234 Galenicals, occurring five times or more in each 10,000 prescriptions and other lists give further detailed information on other items, their use, containers and unit price. About twenty-five more pages have been added but it has been possible to continue the price of 25 cents per copy. The publication may be obtained from the AMERICAN PHARMACEUTICAL ASSOCIATION.

ASSOCIATION BUSINESS

AD INTERIM BUSINESS OF THE COUNCIL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 1935–1936.

Office of the Secretary, 2215 Constitution Ave., Washington, D. C.

LETTER NO. 6.

October 22, 1935.

To the Members of the Council:

32. Fixing Date when N. F. VI Will Become Official. It is expected that N. F. VI will be issued by December 1, 1935, and it therefore becomes necessary to set the date when the Sixth Edition will become official and replace the Fifth Edition.

The Board of Trustees of the U. S. P. Convention has set June 1, 1936, as the date when the U. S. P. XI will become official, and it is advisable that both books become official on the same date, as they will be issued at about the same time.

On page 309 of the April 1926, issue, of the A. PH. A. JOURNAL, Item 68, and on page 404 of the May 1926, issue, of the JOURNAL, Item 74, a record will be found of the action taken by the Council fixing the date when the N. F. V became official.

(*Motion No. 6*) *It is moved by DuMez that the National Formulary, Sixth Edition, shall be deemed to become official and to supersede and replace the National Formulary, Fifth Edition, on June 1, 1936, and that the Mack Printing Company be authorized and directed to print upon the title page of the National Formulary, Sixth Edition, the words "Official from June 1, 1936."* A vote on this motion is called for at this time. If there is objection or any member desires to submit comment, the vote will be considered as tentative.

33. Copy for the Official Coupon for N. F. VI. The first printing of N. F. VI will consist of 25,000 copies and it becomes necessary to order this number of official coupons which the ASSOCIATION is required to furnish.

Heretofore, it has been customary to indicate each printing as a series and to identify each series by a letter, beginning with A, and to number each coupon consecutively beginning with 1. The use of the serial letter has led to some misunderstanding that later series were revisions and each printing can be identified by the numbers.

In the case of the coupons for the U. S. P. XI, it has been decided to omit the serial letter and to continue numbering the coupons consecutively, beginning with 100,001 so that the coupon numbers for U. S. P. XI cannot be confused with those for U. S. P. X, which are below 100,000. It is proposed to carry out the same arrangement for N. F. VI.

The coupon for N. F. VI will be of the same size as that for N. F. V and printed in the same colors—black and tan. The same background cut will be used with the following wording printed thereon:

National Formulary
Sixth Edition
Official Copy
Copyright 1935 by the
AMERICAN PHARMACEUTICAL ASSOCIATION
100,001

(*Motion No. 7*) *It is moved by DuMez that a serial letter be omitted from the official coupons for N. F. VI; that the coupons be numbered consecutively beginning with 100,001, and that the wording given above be approved for use on the coupons.* A vote on this motion is called for at this time. If there is objection or any member desires to submit comment, the vote will be considered as tentative.

34. Use of the Text of the National Formulary VI. An application for permission to use portions of the text of the National Formulary in the forthcoming revision of "General Technic of Medication" has been received from Dr. Bernard Fantus of Chicago, Illinois. The request

was referred to Chairman DuMez of the Committee on Publications who submits the following motion:

(*Motion No. 8*) *It is moved by DuMez that permission to use portions of the text of the National Formulary in the forthcoming revision of "General Technic of Medication" be granted to Dr. Bernard Fantus, and that the customary charge of $5.00 be waived because of the small amount of material quoted and the manner in which it is to be used, with the understanding that the publication will not be issued until the N. F. VI appears.*

35. Applicants for Membership. The following applications properly endorsed and accompanied by the first year's dues have been received:

No. 21, Carl F. Riley, 7054 Veronica Road, Upper Darby, Penna.; No. 22, Morris Garfinkle, 2319 Voorhies Ave., Brooklyn, N. Y.; No. 23, Harry H. Leiter, 624 Price St., Pismo Beach, Calif.; No. 24, Amelia Carmel De Dominicis, 2621 E. Madison St., Baltimore, Md.; No. 25, Charles Greenberg, Wittel Dormitory, Auburn, Ala.; No. 26, Alfred R. Biamonte, 403 37th St., Union City, N. J.; No. 27, Joseph S. Goldwag, 600 Lafayette Ave., Brooklyn, N. Y.; No. 28, Abraham Louis Schneider, 2943 Thomas St., St. Louis, Mo.; No. 29, Sigrid Maria Van Schaack, 614 Linden Ave., Wilmette, Ill.; No. 30, Daniel O. Wolff, 21 Felton Place, Melrose, Mass.; No. 31, Alexander V. Morgenstern, 12 John St., New York, N. Y.; No. 32, Maybelle Fernolld, 700 Fullerton, Chicago, Ill; No. 33, Richard H. Herbine, 113 No. 13th St., Newark, N. J.; No. 34, Cary Melville Turner, 3500 Armstrong, Dallas, Texas; No. 35, Jagadish Kumar Lahiri, c/o The American Express Co., Calcutta, India.

(*Motion No. 9*) *Vote on applications for membership in the American Pharmaceutical Association.*

E. F. KELLY, *Secretary.*

LETTER NO. 7.

October 29, 1935.

To the Members of the Council:

36. Date When N. F. VI Will Become Official. Motion No. 6 (Council Letter No. 6, page 1034) has been carried and the N. F. VI will become official on June 1, 1936. The Mack Printing Company has been authorized and directed to print upon the title page of the N. F. VI the words "Official from June 1, 1936."

37. Official Coupon for N. F. VI. Motion No. 7 (Council Letter No. 6, page 1034) has been carried and the coupons will be prepared in accordance.

38. Use of the Test of the N. F. VI. Motion No. 8 (Council Letter No. 6, page 1035) has been carried and Dr. Bernard Fantus has been advised.

39. Election of Members. Motion No. 9 (Council Letter No. 6, page 1035) has been carried and applicants for membership numbered 21 to 35, inclusive, are declared elected.

40. Publication Date for N. F. VI. The Mack Printing Company has advised that the U. S. P. XI and the N. F. VI will be completed early in December and that they expect to have the books distributed throughout the country so that they can be released for sale on December 16, 1935. The Board of Trustees of the U. S. P. Convention have approved this date as the official date of publication for U. S. P. XI and the Council is requested to take similar action in order that the books will be released on the same date.

(*Motion No. 10*) *It is moved by DuMez that December 16, 1935, be approved as the official date for the publication of the N. F. VI, and that the Mack Printing Company be so advised and directed.*

41. Color of Cover and Label for N. F. VI. It was decided some time ago that the buckram for the cover of N. F. VI should be of the same quality as that used for N. F. V and should be maroon in color. The stock for the first printing of 25,000 copies was ordered at that time. The label to be imprinted on the back-bone of the book will be in gold on black, similar to that on N. F. V, and will bear the words "National Formulary—Sixth Edition—1936."

42. Applicants for Membership. The following applications properly endorsed and accompanied by the first year's dues have been received:

No. 36, Robert Latta Crowe, 874 Union Ave., Memphis, Tenn.; No. 37, Newell W. Tirrell, 33 East St., Warren, Mass.; No. 38, Wilbur R. Borst, 210 Charles Ave., Staten Island, N. Y.; No. 39, James Comstock Tingle, 345 North Broadway, Lexington, Ky.; No. 40, Lloyd B. Edwards,

427 Central Ave., San Francisco, Calif.; No. 41, Robert E. Richards, R. F. D. 3, Box 453, Lodi, Calif.; No. 42, Maurice G. Dixon, 427 Central Ave., San Francisco, Calif.; No. 43, John Shepard Puller, Starkville, Miss.

(*Motion No. 11*) *Vote on applications for membership in the American Pharmaceutical Association.*

E. F. Kelly, *Secretary.*

LETTER NO. 8.

November 19, 1935.

To the Members of the Council:

43. Publication Date for N. F. VI. Motion No. 10 (Council Letter No. 7, page 1035) has been carried and the Mack Printing Company has been so advised. Attached is copy of Bulletin No. 3, officially announcing the publication date of N. F. VI and the date when it will become official and replace N. F. V.

44. Election of Members. Motion No. 11 (Council Letter No. 7, page 1036) has been carried and applicants for membership numbered 36 to 43, inclusive, are declared elected.

45. Flexible Leather Binding for N. F. VI. A retail price of $7.00 per copy for N. F. VI in Flexible Leather Interleaved Binding was set in Council Letter No. 8, 1934–1935, page 1244, dated November 9, 1934, and this was confirmed at the meeting of the Executive Committee held in Washington on January 4, 1935. Since that time, it has become apparent that a Flexible Leather Binding, without interleaves, will be preferred for N. F. VI as well as for U. S. P. XI.

The Mack Printing Company was requested to furnish a price on this binding and quoted $0.97 per copy and a return of $4.32 per copy to the ASSOCIATION, if a retail selling price of $6.00 per copy was set. The U. S. P. Board of Trustees have set a retail price of $6.00 per copy for the U. S. P. XI Flexible Leather Binding, without interleaves.

(*Motion No. 12*) *It is moved by DuMez that the quotation of the Mack Printing Company of $0.97 per copy for N. F. VI in Flexible Leather Binding, with a return of $4.32 per copy to the A. Ph. A. be approved and made a part of the contracts for the manufacture and for the distribution and sale of N. F. VI, and that the retail selling price of the N. F. VI in Flexible Leather Binding, be set at $6.00 per copy.* A vote on this motion is called for at this time. It will be considered tentative if there is objection or if members of the Council desire to submit comments.

46. Special Committee on Emblem for the Association. Please see Item No. 143, Council Letter No. 22, 1934–1935, page 704, A. PH. A JOURNAL for August 1935. In accordance with the action taken, Chairman Hilton has appointed George D. Beal, *Chairman*, Edward Kremers, W. A. Hamor, Charles H. LaWall and E. G. Eberle as members of the Special Committee to consider this matter and to report to the Council.

In the mean time, a request has been received from Dr. Hamor, Assistant Director of the Mellon Institute of Industrial Research, to use the emblem of the ASSOCIATION in an appropriate manner in the new building of the Institute, with the statement that with the approval of the A. PH. A., the present emblem, carrying the letters A. PH. A., will be used and that when and if a new emblem replaces it, the Institute will have the new device executed in replica and put in the place of the reproduction of the present emblem.

(*Motion No. 13*) *It is moved by Eberle that the Mellon Institute be granted permission to use the present emblem of the Association in the manner explained above with the understanding that the reproduction will be replaced by that of a new emblem when and if it shall be approved.* A vote is called for at this time. It will be considered as tentative if there is objection or if members of the Council desire to submit comments.

47. Correction in the Minutes of the Council. Dr. Fischelis has called attention to two errors in the minutes of the Council as submitted in Council Letter No. 22, 1934–1935. The members of the Council are requested to change the term "Director of Publicity" to "Director of Publications" in paragraph three under Item 123, page 699, A. PH. A. JOURNAL, August 1935; and to change the word "estimate" to "entrusted" in recommendation (3) in the report of the Committee on Research, Item 136, pages 702–703 of the same issue of the JOURNAL.

48. Use of Text of N. F. The following letter from C. W. McClintock, Director, Laboratory Supply Stores, Ohio State University, Columbus, Ohio:

"Our Department contemplates the compilation of a Formulary to be used on our campus here at Ohio State University. In our Formulary, we wish to use certain portions of the text of

the National Formulary. Will you kindly advise us where we may obtain such permission or else refer our request to the proper authority directly?" It was referred to Chairman DuMez of the Committee on Publications who wrote as follows:

"In response to the request of C. W. McClintock, Director of Laboratory Supply Stores of Ohio State University, it is moved that permission be granted to use portions of the text of the National Formulary for comment or otherwise in the compilation of a formulary to be used on the campus at Ohio State University and that no charge be made therefore.

"I offer this motion at this time because I feel that we have so much precedent for granting permission in similar cases that it would be going to unnecessary trouble to refer this to the Publication Committee."

(*Motion No. 14*) *It is moved by DuMez that permission be granted to use portions of the text of the National Formulary for comment or otherwise in the compilation of a formulary to be used on the campus of the University of Ohio and that no charge be made therefore, with the understanding that the formulary will not be issued until after the N. F. VI is released for sale.* A vote on this motion is called for at this time but will be considered as tentative if there is objection or if members of the Council desire to submit comment.

49. American Association for the Advancement of Science. On August 28th, the A. A. A. S. was informed of the adoption by the A. PH. A. of two resolutions relating to that ASSOCIATION as given on pages 712 and 713 of the August 1935, issue, of the A. PH. A. JOURNAL. The following letter, dated October 29th, has been received from Permanent Secretary Henry B. Ward:

"At a recent meeting of the executive committee of the ASSOCIATION held in this city your letter of August 28th, was laid before the members and entered in the record of the occasion.

"I am writing to tell you that the committee appreciates genuinely the action you took in expressing your gratification of the arrangements agreed upon.

"On our part I may say that we were indebted to you for the prompt action in appointing delegates to the Seventh Pan-American Scientific Congress which was held in Mexico City last September. You will be interested to know that because of your prompt action and that of various other affiliated societies a conspicuous part of the American delegation at the Congress in Mexico City consisted of representatives from this ASSOCIATION and its affiliated societies.

"With best wishes for the continued and increasing success of your organization and in the confident hope that the relations established may serve as an important element in the advancement of science."

50. Appointment of Committees and Delegates. President Costello has made the following appointments: Committee on Cosmetics, Maison de Navarre, Detroit, Mich., is added to the membership; Delegates to National Drug Trade Conference, James H. Beal, Robert P. Fischelis and E. F. Kelly are named as delegates to the Conference for 1935–1936.

President Costello writes as follows:

"It is my belief that the purpose of the Conference can be best served by those who have long been familiar with its practices and functions and that the provision for appointment of three delegates annually should be supplanted by a provision for three-year terms for each delegate, one to be appointed annually.

"Since no instructions are given to delegates who participate in the Conference by their respective Associations, I assume each delegate is privileged to exercise its own judgment as to their policy or attitude toward it.

"I am convinced that the Drug Trade Conference is a useful institution, which has served a useful purpose, and will continue to be so if it is held in regard by the delegates as a Conference and not treated as a super drug organization.

"In discharging my responsibility to the AMERICAN PHARMACEUTICAL ASSOCIATION in the appointment of its delegates I do so in the belief that you will effectively serve the Conference, without prejudice, and the ASSOCIATION."

51. Applicants for Membership. The following applicants properly endorsed and accompanied by the first year's dues have been received:

No. 44, Leonard D. Powers, 715 S. Wood St., Chicago, Ill.; No. 45, H. A. Sasse, Redfield, S. Dak.; No. 46, E. E. Miller, Davenport, Wash.; No. 47, Edwin Martin Durand, 133 W. Milton Ave., Rahway, N. J.; No. 48, Paul David Carpenter, 665 South St., Elgin, Ill.; No. 49, Joseph C. Ocenasek, 1121 Washington, Blvd., Oak Park, Ill.; No. 50, Roy E. Phillips, 3423 S. Flores St., San

Antonio, Texas; No. 51, J. M. Anderson, 8 Brown Place, Woburn, Mass.; No. 52, Albin Stitt, 777 Neponset St., Norwood, Mass.; No. 53, Charles Walter White, 56 Queensberry, Boston, Mass.; No. 54, Lawrence S. Crosby, 12 Grafton Ave., East Milton, Mass.; No. 55, John L. MacIver, 37 Whittier Rd., Newtonville, Mass.; No. 56, Joseph Allen Hailer, 20 Orchard St., Jamaica Plain, Mass.; No. 57, Neut. Gardner, 1700 W. 39th St., Kansas City, Mo.; No. 58, Henry Brenwasser, 226 9th Ave., New York, N. Y.; No. 59, Walter A. Piepho, 4224 N. Winchester Ave., Chicago, Ill.; No. 60, Raymond S. Adamson, 715 S. Wood St., Chicago, Ill.; No. 61, Sam Bradshaw, 4800 Charlotte Ave., Nashville, Tenn.; No. 62, William Charles Atkinson, 1041 W. 36th St., Los Angeles, Calif.; No. 63, William M. Lange, 57 Dove St., Albany, N. Y.; No. 64, Winifred Bump, Pullman, Washington; No. 65, Janice Sourwine, Box 686 C. S., Pullman, Washington; No. 66, Steve Davidson, Box 717 C. S., Pullman, Washington; No. 67, James Chase, 403 Side St., Pullman, Wash.; No. 68, William E. Allen, Box 724, C. S., Pullman, Wash.; No. 69, Vernetta Engebretson, Box 156, C. S., Pullman, Wash.; No. 70, John Foster, 505 Colorado, Pullman, Wash.; No. 71, Harlan Hanson, Box 366 C. S., Pullman, Wash.; No. 72, Robert Hill, 106 Windus Ave., Pullman, Wash.; No. 73, Gail Howard, 1725 B St., Pullman, Wash.; No. 74, Thomas Hurley, Box 341 C. S., Pullman, Wash.; No. 75, Geraldine Jayne, Box 874, C. S., Pullman, Wash.; No. 76, Edward L. Jennings, 505 Colorado St., Pullman, Wash.; No. 77, Lawrence Klock, 505 Colorado, Pullman, Wash.; No. 78, Fred Krauel, 1605 F St., Pullman, Wash.; No. 79, Robert E. Lee, 747 C. S., Pullman, Wash.; No. 80, Donald McLeod, 812 Linden, Pullman, Wash.; No. 81, Chester Moss, Box 674 C. S., Pullman, Wash.; No. 82, Harold Pfannekuchen, Box 116 C. S., Pullman, Wash.; No. 83, Mark Preston, 506 Morton St., Pullman, Wash.; No. 84, Elmer Ray, Box 674 C. S., Pullman, Wash.; No. 85, James Reavis, R. No. 1, Box 12, c/o I. Williams, Pullman, Wash.; No. 86, John D. Scheel, Box 366 C. S., Pullman, Wash.; No. 87, Ray Seaman, 510 Campus, Pullman, Wash.; No. 88, Ted Stahlborn, 910 State St., Pullman, Wash.; No. 89, Tako Torigoe, Box 354 C. S., Pullman, Wash.; No. 90, Leonard Paul Zagelow, Box 686, C. S., Pullman, Wash.; No. 91, Ralph Gerald Ferrace, 344 Orange St., Newark, N. J.; No. 92, Ralph F. Voigt, 3809 Elliot Ave. S., Minneapolis, Minn.; No. 93, William Janecek, 483 Clinton Ave., St. Paul, Minn.; No. 94, Ole Gisvold, University of Minnesota, Minneapolis, Minn.; No. 95, Wm. H. Stokes, Taylerville, Ill.; No. 96, Arnold C. E. Christensen, 2342 N. Kenneth Ave., Chicago, Ill.; No. 97, Evan N. Tysdal, 325 W. Huron St., Chicago, Ill.; No. 98, Robert Livingston Longyear, 489 E. 34th St., Brooklyn, N. Y.; No. 99, George E. Milliman, 216 Mountain Ave., Bound Brook, N. J.; No. 100, William O. Knight, 11432 Indiana Ave., Chicago, Ill.; No. 101, Daniel Fisher Nealon, P. O. Box 485, Paris, Tenn.

(*Motion No. 15*) *Vote on applications for membership in the American Pharmaceutical Association.*

52. Meeting of the Council. It was understood that the meeting of the Council in December would be held just before or just after the annual meeting of the National Drug Trade Conference as several members of the Council are also delegates to the Conference.

The annual meeting of the Drug Trade Conference will be held on Friday, December 6th, either Thursday the 5th or Saturday the 7th is convenient for President Costello and for those members of the Council living in Washington.

The members of the Council are requested by Chairman Hilton to indicate on the enclosed voting card which day is preferred for the Council meeting.

E. F. Kelly, *Secretary.*

"ABSORPTION OF DRUGS BY THE HUMAN SKIN."*

Iodine, Potassium Iodide, Methyl Salicylate and Quinine Dihydrochloride were applied in the form of ointment (Petrolatum, Benzoinated Lard and Lanolin being used as the bases), and, in the case of Iodine, also as tincture and aqueous solution. The presence of the drug itself or of derivatives in the urine was accepted as a criterion of absorption. The influences of the ointment base, alcohol and water as the solvent, age, sex, complexion, site of application and nature of the drug itself on the absorption by the skin are disclosed.

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* Abstract of a paper before Scientific Section, A. PH. A., Portland meeting, 1935—by A. Richard Bliss, Jr.

EDITORIAL NOTES

On account of other matter, reports and papers this section has only a few pages. The reports of the Portland meeting will be concluded in the December issue.

The U. S. Pharmacopœia XI and National Formulary VI will be on sale December 16th, but will not be official until June 1, 1936.

MEETING OF THE COUNCIL A. PH. A.

A meeting of the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION will be held in Washington at the AMERICAN INSTITUTE OF PHARMACY, December 5th, to discuss various matters referred to this meeting at Portland.

JOURNAL EXCHANGES.

The JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION will exchange other copies for that of January 1922, and that of September 1914.

CERTIFICATE ISSUED TO CONTRIBUTORS TO CENTURY OF PROGRESS FUND.

A certificate of participation has been awarded by the AMERICAN PHARMACEUTICAL ASSOCIATION and the Local Committee, signed by the officers, to those who contributed to the fund and made the Pharmacy Exhibit possible.

CHRISTMAS SEALS.

The campaign against tuberculosis is meeting with success. Such is the verdict of physicians and of statisticians whose business it is to study mortality rates. But the battle is not yet won.

Rather, it is indicated that, because of widespread poverty resulting from the depression, some of the gains of recent years may be lost. The white plague always has been a poor man's disease. It has a definite relation to economic stress. When times are hard it prospers. Support by purchasing Christmas Seals affords an opportunity to help the cause.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission has announced an open competitive examination as follows:

SENIOR CHEMIST (DISTILLATION).

Applications for the position of senior chemist (distillation) must be on file with the U. S. Civil Service Commission, Washington, D. C., not later than January 6, 1936. At present there is a vacancy in the Alcohol Tax Unit, Treasury Department, which will be filled as a result of this examination.

The entrance salary is $4600.00 a year, subject to a deduction of $3\frac{1}{2}$ per cent toward a retirement annuity.

Applicants must have been graduated with a bachelor's degree from a college or university of recognized standing upon the completion of at least 118 semester hours, majoring in chemistry or chemical engineering. In addition, except for the substitution provided below, they must show, as a minimum, experience, *acquired since graduation*, of length and quality indicated below: At least 6 years of responsible progressive professional experience in scientific chemical work of an investigative or process development nature, at least 2 years of which must have been in the practice and theory of distillation technique involving the separation of low-boiling fractions and azeotropic mixtures. Experience in the manufacture and use of "metallo-organic" compounds and in the use of activated carbon or other adsorbents in filtration technique is highly desirable, and additional credit will be given for experience of this character.

Full information may be obtained from the Secretary of the United States Civil Service Board of Examiners at the post-office or custom-house in any city which has a post-office of the first or the second class, or from the United States Civil Service Commission, Washington, D. C.

ABSTRACT OF U. S. P. CHANGES.

Additional abstracts of proposed changes in the Eleventh Revision of the U. S. Pharmacopœia are now available for the following subjects.

Part II—Proximate Assays
Part III—Volatile Oils
Part IV—Extracts, Fluidextracts and Tinctures—Solutions, Spirits and Syrups—Cerates, Ointments and Miscellaneous Galenicals
Part V—Botany and Pharmacognosy
Part VI—Organic Chemicals.

Copies of these abstracts may be obtained by addressing the chairman of the Committee of Revision. There is no charge.

PERSONAL AND NEWS ITEMS.

Dr. R. Eder, member of the AMERICAN PHARMACEUTICAL ASSOCIATION and head of the Pharmaceutical Institute, Zürich, Switzerland, has made an extended tour of Canada and the United States. He is accompanied by his wife, who also is a scientist and member of a number of Women's organizations in the scientific field.

Dr. Eder is making a study of the pharmaceutical institutions and of pharmaceutical and chemical manufacturing plants with a purpose of embodying some of the ideas in the curriculum of the institution of which he is the head. Further comment will be made in the next issue of the JOURNAL. At this writing the visitors are in Washington.

John Uri Lloyd, veteran member and also as former president of the AMERICAN PHARMACEUTICAL ASSOCIATION, has returned from a visit to Japan. He arrived in Japan September 26th, and, as stated, returned safely and in good health from this extended journey.

James H. Breasted, noted Egyptologist, who was among those first to enter Tut-ankh-Amen's tomb, is reported critically ill. He is a noted author, lecturer, recipient of many degrees, honored by universities, organizations, here and abroad, and by many countries. He is also a graduate of the Chicago College of Pharmacy before taking up the researches which made him famous throughout the world. He died December 2nd.

Dr. J. J. Durrett has been reappointed chief of the drug division of the United States Food and Drug Administration, a position which he held for some time until his resignation four years ago.

During the past four years Dr. Durrett has been director of professional relations for E. R. Squibb & Sons. He has resigned that post, effective January 1st, to return to the Government service.

Dr. Ole Gisvold is now a member of the University of Minnesota staff, of the Department of Pharmaceutical Chemistry under Dr. C. H. Rogers.

Dr. Howard B. Lewis, University of Michigan, returned from a month's lecture tour to the Pacific coast and return, under the auspices of the Biochemistry Section of the American Chemical Society.

The University of Buffalo is planning for a Golden Jubilee Banquet on April 22, 1936, celebrating the 50th anniversary of the School of Pharmacy. An oil portrait of Dr. Willis G. Gregory, who has been a member of the faculty since its founding, will be a gift of the Alumni of the School of Pharmacy.

On October 29th, the Mercer Club, Buffalo, honored him at a luncheon.

Dr. Charles Campbell, of Washington, D. C., presented to the AMERICAN INSTITUTE of PHARMACY two mortars, one, a Wedgwood and the other a large porcelain mortar. They were given to Dr. Campbell by Mrs. Drane and had been in use for many years by the late Dr. Marcellus MacKenzie of Charlottesville, Va. They date back to about 1846.

Andrew Scherer's 80th birthday was celebrated by the Chicago Verterans' Association on November 21st. The guest of honor has been a member of the AMERICAN PHARMACEUTICAL ASSOCIATION for more than 50 years.

M. R. MacFarland succeeds the late J. F. Roberts as Registrar-Treasurer of Ontario College of Pharmacy.

Malcolm G. Gibbs, founder of People's Drugstores, was feted October 29th, by his fellow-citizens on the occasion of the 30th anniversary of founding the stores of which he is the head. Normal C. Kal, president of the Advertising Club, presided at the dinner. A letter of congratulations was received from President Roosevelt.

Armour and Company will open a new pharmaceutical manufacturing laboratory at Chicago. In addition, new research laboratory facilities will be established devoted to scientific investigation of organotherapeutic remedies. The new pharmaceutical equipment will be housed in the same building with other Armour laboratory facilities so that research equipment may be fully utilized.

QUAKE INJURIES.

The Starz Pharmacy, Helena, Mont., received a severe blow and although the prescription room was not seriously damaged, the front room stocks were thrown on the floor by the swaying of the wall. C. H. Herman, proprietor of the Starz Pharmacy, estimates his damage at between $400.00 and $500.00. Sympathy is expressed. Carl Herman and Emil Starz are members of the AMERICAN PHARMACEUTICAL ASSOCIATION.

CHARLES E. DOHME MEMORIAL LECTURESHIP.

The eleventh course of lectures of the Charles E. Dohme Memorial Lectureship was given during November at Henry M. Hurd Memorial Hall, Baltimore, by Professor James A. Gunn, director of the Nuffield Institute of Medical Research, University of Oxford.

PHARMACY WEEK.

Dean Ernest Little gave a radio address on "The Romance of Pharmacy" on a special Pharmacy Week Program, on coast-to-coast network of the Columbia Broadcasting System.

University of Florida broadcasted addresses by E. H. Rauch, B. L. White, E. J. Ireland, Victor Wray, Max S. Adler and C. G. Hamilton. A Pharmacy convocation was part of the week's program. Edward S. Rose, of Boerner's Prescription Pharmacy, Iowa City, displayed a Pharmacy Week window based on the Code of Ethics of AMERICAN PHARMACEUTICAL ASSOCIATION—1, The Pharmacist and the Public; 2, The Pharmacist and the Physician; 3, Relation of Pharmacists to Each Other. Certificates of membership in Associations, U. S. Pharmacopœia, National Formulary and eighty preparations of these standards were displayed.

The following is quoted from a radio talk:—"To-day more than a million dollars worth of vaccines and serums have been shipped into Africa from pharmaceutical laboratories of America and Europe, to safeguard soldiers from infection."

"The apothecary's art, bound up of old with mystery and superstition, has gone completely modern. It has none of the dusty, shabby-genteel aspect of old legends. The present trend is to make the prescription department the heart of the store, with ware and apparatus accurate, immaculate and aseptic. This same spirit is reflected in other departments, where everything from cosmetics to ice-cream sodas may be vended, all under professional supervision. To the consumer, this means simply better health protection in a variety of ways. Some day the public will demand of all retail stores that they be clean and well-equipped, adequately lighted and conveniently arranged for sanitary display of merchandise. The pharmacy, which has never lost its influence as a community gathering place, is leading the parade toward modernization."

OBITUARY.

JOSEPH F. HINDES.

Joseph F. Hindes, President of Emerson Drug Company, Baltimore, and member of the AMERICAN PHARMACEUTICAL ASSOCIATION, died October 29th, aged 73 years. He entered the employ of Emerson Drug Company in 1890, a year after the founding of the latter by Captain Isaac E. Emerson. Upon the death of the latter, he became president of the Company. He was also vice-president of the Citro-Chemical Works of America and the Maryland Glass Corporation.

FREDERICK H. FRICKE.

Frederick Henry Fricke, St. Louis druggist and former pure food and drug commissioner of Missouri, was found dead November 15th, in a room at the Auditorium Hotel, 1803 Pine Street. He was head of the Fricke-Hahn Drug Company and had been in the drug business in St. Louis for about thirty-five years. He was active in the campaign in St. Louis for funds for the Headquarters of the AMERICAN PHARMACEUTICAL ASSOCIATION.

Mr. Fricke was a former president of the Missouri Pharmaceutical Association and active in association matters. He is survived by his widow and a daughter, Mrs. Ethel Feldhaus.

William Livingston Crounse, for twenty years Washington representative of the National Wholesale Druggists' Association until his retirement in 1934, died at his home in Washington, November 21st, aged seventy-four years.

Mr. Crounse was born in Milwaukee, the son of Lorenzo Livingston Crounse and Mary C. Collins Crounse. He attended the Washington public schools and was graduated from Harvard University in 1884. He is survived by his widow.

J. Fred Windolph, for a number of years member of the AMERICAN PHARMACEUTICAL ASSOCIATION, died November 1935, aged 71 years. He was a director and former secretary of Norwich Pharmacal Company.

Mr. Windolph was graduated from the Philadelphia College of Pharmacy in 1885 and until 1899 was active as retail pharmacist in

Dover, Del., and Brooklyn, N. Y. He was prominent in Masonic circles.

C. Louis Dohme, one of the founders of Sharp & Dohme, died in Boston. Since his retirement Mr. Dohme has resided in Atlantic Beach, Fla. He is survived by his widow and three children.

Thomas A. Buckland, former city chemist of St. Louis and for a number of years president of St. Louis College of Pharmacy, died October 13th, aged 71 years. His widow survives the deceased.

Dr. Edward Starr Judd died November 30th, in Chicago, of pneumonia, aged 57 years. He was chief of the Mayo surgical staff. Dr. Judd held that society would be helped if the people were educated along medical lines.

SOCIETIES AND COLLEGES.

DRUG TRADE CONFERENCE TO MEET DECEMBER 6TH.

The National Drug Trade Conference will hold its annual meeting here December 6th, in the Washington Hotel. In addition to the regular committee reports, the conference will discuss the pending Federal food and drug bill, proposals to continue the NRA idea, State fair trade laws and other legislative proposals.—*Oil, Paint and Drug Reporter.*

ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS.

The Association of Official Agricultural Chemists held its fifty-first annual meeting in Washington during the week of November 11th. The Wiley memorial address was delivered by Dr. W. H. MacIntire of the University of Tennessee.

About twenty-five methods were dropped from the A. O. A. C. book because the methods appear in the forthcoming U. S. P. or N. F. The following officers were elected:

President, H. H. Hanson, State Board of Agriculture, Dover, Del.; *Vice-President,* C. C. McDonnell, Washington; *Secretary-Treasurer,* W. W. Skinner, U. S. Bureau of Chemistry and Soils, Washington; additional members of the *Executive Committee,* H. R. Kraybill, La Fayette, Ind.; W. S. Frisbie, Washington; C. L. Hare, Auburn, Ala., and the retiring president, F. E. Blanck, Washington.

IDAHO PHARMACEUTICAL ASSOCIATION.

Idaho State Pharmaceutical Association issues *bulletins* and a suggestion from that of No. 15 is that they are sending information to pharmacists of the state of important publicity. In this way the druggists of Idaho are kept in touch with important legislation and other matters.

Another activity is the issuance of prizes to young men for competitive papers. The prize winner announced in the bulletin for November 15th, presented the subject, "What Is Wrong with the Drug Business?"

DISTRICT OF COLUMBIA PHARMACEUTICAL ASSOCIATION.

The District of Columbia Pharmaceutical Association will meet at Raleigh Hotel December 10th. A report will be made on legislative matter; among the subjects will be the consideration of minimum equipment, barbituric acid regulations, a uniform narcotic law.

The pharmacists of the District of Columbia have taken active part in accident prevention. Frequently pharmacists are called upon to render first aid to persons injured in automobile accidents and gain first-hand information relative to accidents.

OFFICERS ARIZONA PHARMACEUTICAL ASSOCIATION.

Arizona Pharmaceutical Association at the annual meeting held in Tucson elected the following officers:

President, Fred W. Moore, Flagstaff; *First Vice-President,* Andrew Martin, Tucson; *Second Vice-President,* N. W. Stewart, Phoenix; *Treasurer,* A. M. Burch, Phoenix; *Executive Committee:* L. R. Johnson, Tucson; J. B. McDonald, Jerome; J. B. Ryan, Globe; H. W. Vestal, Somerton; W. C. Denson, Mesa; *Executive Secretary,* Lawrence Evans.

A NEW APPROACH TO LEGALIZED FAIR TRADE.

Drug Topics is asked by Dr. Robert L. Swain, chairman of the N. A. R. D. Committee on National and State Fair Trade Legislation, to emphasize that the proposed "National Fair Trade Enabling Act," published in *Drug Topics*

for October 28th, while "correct as to principle is only tentative as to phrasing." Between now and January when Senator Tydings of Maryland will present the prosposal on the opening day of Congress, the measure is to be subjected to intensive study and this may lead to slight changes in phraseology.

CODE FUNDS GO TO PHARMACY BOARD.

Retail druggists in the First Congressional district of Oregon, recently voted to give the funds, still in the hands of the Code Authority of that district, to the Oregon Board of Pharmacy, to assist in enforcement of the pharmacy laws. The amount is approximately $200.00. A ruling by the attorney-general authorizes the board to accept such funds. Stanley Stevenson, of Eugene, was chairman of the Code Authority for that district.

PROTECT RIGHT TO EXIST.

Senator Millard Tydings in his address before the N. A. R. D., in Cincinnati, said:

"The problems of the retail druggist, are first, the general problems of the country, and second, his individual problem. Naturally the druggist cannot prosper unless the whole country prospers, and, therefore, while naturally we think first of our immediate business we should not lose sight of the larger aspect of the matter for it is the paramount foundation upon which trade revival and business recovery must be built. More intimately, however, the retail druggist is facing a desperate battle as he sees loss leader selling activities threatening more and more his very existence. By sensibly and soundly marshalling your forces, measures can be enacted which will at least minimize the dangers from this source and I know you shall evolve the solution and eventually by your seasoned effort accomplish the results desired. However, let me close with an appeal to you as citizens of this great nation to more and more lift your eyes beyond the problems of your immediate business to that of the country as a whole, for from the country as a whole come your customers who cannot buy unless they are employed, who cannot be employed unless there is a demand for their goods, and so, therefore, even with your own business problem solved, your business cannot go ahead except the country goes ahead."

ANNUAL REPORT ON DRUG CONTROL WORK.

Dr. W. G. Campbell, Chief of the Food and Drug Administration, has rendered the annual report of the Food and Drug Adminstration, of the fiscal year ending June 30, 1935. He states that the ether supply is much better and ampuls make a greater showing; out of ninety-six samples submitted for biological assay of imported crude drugs, six were held out of 431 samples of domestic drug preparations; thirty-two required action.

GORGAS MEMORIAL INSTITUTE.

Rear Admiral Cary T. Grayson was reëlected chairman of the Gorgas Memorial Institute of Tropical and Preventive Medicine at the annual election, November 13th. Other officers were also reëlected.

Report was made on certain experiments started about six years ago on the control of malaria in Panama. The experiments include treatment with medicinal substances.

INTERNATIONAL SERUM CENTER IS ESTABLISHED.

The Royal Danish Serum Institute at Copenhagen will become a sort of international clearing house for serums used in treating or preventing disease, as a result of action taken by the Eleventh Congress of Biological Standardization held in connection with the League of Nations Hygiene Congress.

The Danish Institute has been appointed the international center for preparation and standardization of serum for such diseases as dysentery, lockjaw, diptheria, pneumonia and wound fever. London will similarly become the international center for vitamins, insulin and the sex hormones.

International standards for the preparation and composition of twenty-five of the medicaments to be distributed from Copenhagen and London have been agreed on by the Congress. —*Science News Letter.*

TRAFFIC IN OPIUM AND OTHER NARCOTICS.

The U. S. Treasury Department has issued the annual report, ending December 1934, on traffic in opium and other dangerous drugs. It is pleasing to note that the percentage of violations by druggists is comparatively small. The greater number of violations by far are those by illegitimate dealers and distributers. Care is evidenced by legitimate dealers in all activities.

W. Bruce Philip, in his *bulletin* of October 28th, admonishes druggists that **Fair Trade**

legislation faces a critical period and all associations and druggists should contribute efforts to bring this new legislation into Congress. It will be helpful if the individual in discussing such legislation will get the viewpoint of the Congressmen, so that if there are points which should be corrected, discussion by those who are studying the legislation can meet the objections.

HISTORY REPEATS IN AMERICAN MEDICAL EDUCATION.

The *Journal of the A. M. A.*, for September 21st, comments that the factors which brought about unsatisfactory conditions are again at work, as a result of dependence on tuition fees. The tendency has been receiving attention of the Council and it is suggested that educators, state boards of examination, physicians and public authorities may well also give it their consideration. Statistics given in the comment are quoted in part.

"Thirty years ago there were in the United States 160 medical schools with an enrollment of 26,147. Ten years later, as a result of the investigation of the Council on Medical Education and of the publicity afforded by the Carnegie Foundation, for the Advancement of Teaching, the number of schools had been reduced to ninety-six and the enrollment to 14,891. Shortly after 1918, when the war ended, there was manifested a tendency to increase; in 1925 the number of students was 18,200. During the academic year just closed it was 22,888. We have returned nearly to the place where we were when the Council was created. True, the number of schools has not increased with the growing enrollments of recent years. . . ."

THE NATIONAL FORMULARY, SIXTH EDITION.

The AMERICAN PHARMACEUTICAL ASSOCIATION announces that its Council has officially approved December 16, 1935, as the date when the new N. F. VI will be released for sale in all parts of the country, and has also approved June 1, 1936, as the date when the N. F. VI will become official and will supersede the N. F. V.

As previously announced, the N. F. VI will be distributed for the ASSOCIATION by the Mack Printing Company of Easton, Penna.

The new National Formulary represents a complete and thorough revision of N. F. V. Admissions and deletions are based on information obtained in the U. S. P.-N. F. Prescription Ingredient Survey. This survey was made to determine the materials prescribed and the extent of their use throughout the country. The N. F. VI, therefore, supplements the scope of the Pharmacopœia and supplies additional information on simples, formulas, diagnostic reagents and standards required by the pharmacist in the practice of his profession.

Of the 689 monographs in the N. F. VI, 208 are Drug or Chemical Monographs and 481 are Monographs of Pharmaceutical Preparations. The more important additions have been in the monographs for ampuls, tablets, fluidextracts, syrups, tinctures and ointments.

LEGAL AND LEGISLATIVE.

OHIO STATE UNIFORM NARCOTIC DRUG ACT.

Secretary M. N. Ford of the Ohio Board of Pharmacy is sending out information on the new State Uniform Narcotic Drug Act, which became effective September 6, 1935. In most respects, the compliance with the Federal Narcotic Act, will meet the requirements of the new State Act.

The Board has ruled that only those who desire to cultivate or grow Opium, Coca Leaves, Cannabis or other narcotic drugs, need to register and obtain a license as required under Section 12672–2. No license will be granted any applicant until and after an investigation has been made and the application approved.

The Board also ruled that Article 7, under Section 12672–16, does not prohibit the sale of Hypodermic Syringes or Hypodermic Needles.

Section 12672–8, Article 5, provides manufacturers and wholesalers of Cannabis Indica or Cannabis Sativa shall be required to render with every sale of Cannabis Indica or Cannabis Sativa an invoice, whether such sale be for cash or credit, and such invoice shall contain the date of such sale, the name and address of the purchaser and the amount so sold. Every purchaser of Cannabis Indica or Cannabis Sativa, from a wholesaler or manufacturer, shall be required to keep the invoice rendered with such purchase, for a period of two years.

Section 12672–5, Article 1, provides in part

that the pharmacist filling a narcotic prescription, shall write the date of filling and his own signature on the face of the prescription and the prescription shall be retained on file by the proprietor of the pharmacy in which it was filled for a period of two years. The prescription shall not be refilled.

Section 12672-7, Article 1, provides that no one except a pharmacist may sell exempt narcotic drugs and preparations. A complete record of all such sales must be maintained.

The penalty for violating the new Uniform Narcotic Drug Act is, for the first offense, a fine of not exceeding five hundred dollars, ($500.00), or imprisonment for not exceeding five years, or by both such fine and imprisonment, and for a subsequent offense, a fine of not exceeding one thousand dollars ($1000.00), or imprisonment for not exceeding five years, or both such fine and imprisonment.

The law also provides for the revocation of the certificate of a pharmacist who is convicted of violation of this Act.

Section 12672-18 provides the Act shall be enforced by the State Board of Pharmacy and by all officers within the state. This is to be construed as applying to Federal, State, County and Municipal officers.

ALL BRANCHES OF DRUG TRADE EVOLVE MARYLAND CONTRACTS.

As result of a month of conferences among retail and wholesale druggists and drug manufacturers, the fair trade committee of the Maryland Pharmaceutical Association, of which Simon Solomon is chairman, has succeeded in working out the form of contracts which the three divisions of the industry will be asked to sign. Printed copies of the contracts are going to retailers immediately.

Two copies of each contract will be sent to every retailer, and he will be requested to record on an attached slip his wholesale affiliations. The fact that he names one particular wholesaler, however, will not prevent him from dealing with any other wholesalers in the city.

CONTRACTS TO BE KEPT ON FILE.

The retailer will be requested to send the copy of his wholesaler for his signature. The wholesaler, after stating his minimum prices will keep one copy and return the other to the retailer, who is to send it to the committee which will keep it on file as a record.

The idea in Maryland is to leave the operation of the plan entirely in the hands of the retailers themselves, instead of giving the wholesaler the opportunity to control it. The committee plans a record of the fair trade stand of each firm in the trade.—*Drug Topics*, November 25, 1935.

NEW YORK FAIR TRADE ACT HELD UNCONSTITUTIONAL.

The New York Fair Trade Act was held unconstitutional in a decision handed down by Justice Frederick P. Close of the State Supreme Court, in White Plains, N. Y. Plaintiff was Doubleday, Doran & Co., book publishers, who sued R. H. Macy & Co. The same law was *upheld* in a prior ruling by Justice Philip A. Brennan, of Supreme Court in Kings County, in the case of Cooper & Cooper *versus* Angert.

Doubleday, Doran & Co., claimed they had made contracts with its retail subsidiary, Doubleday, Doran Bookshops, Inc., setting the retail price of certain books and that Macy was selling their books below the established minimum. Attorneys for both litigants agreed to the facts of the case so that it might be decided strictly on its constitutionality. Following the decision, Doubleday, Doran said appeal would be taken.

Justice Close held that although a law perhaps could be devised which would bring about resale price maintenance, "the defects in this act are so seemingly patent that it must be declared invalid." He said, "Many writers on economic questions have long urged that legislative relief be granted against so-called price-cutting, maintaining that it is an economic evil that should be eradicated. That may be so but my present opinion is that our fundamental law must be changed before such an act as this can be upheld." He added that if our organic law is to be held elastic enough to permit this type of act, it should be announced by the "court of last resort."

"The Adminstration has addressed itself to over-production, but not to the displacement of labor by machinery. It has endeavored to promote general business recovery through the N. I. R. A. Now that the Administration is asking for facts showing what happened before, during and since the operation of the National Industrial Recovery Act, it behooves industry to furnish them before December, or not expect any relief from Congress. This not only applies to the law that will supersede the N. I. R. A., if any, but to the passage of the Patman bill prohibiting discrimination in prices to purchasers and any bill amending the Sherman

Act so as to permit the making of contracts under state price maintenance laws by those engaged in interstate commerce."—*Brokmeyer Bulletin.*

Clip sheet of November 10th, issued by the Press Service of the U. S. Department of Agriculture, indicates that ginger ale and some other beverages contain caffeine without making such a statement. The statement is further made that adding caffeine to ginger ale and soft drinks of that type changes their identity and tends to make them stimulating. These beverages are widely consumed by children and persons who are ill. A further comment is that the consumer is entitled to know when ginger ale, root beer and other beverages which ordinarily do not contain caffeine have been changed in this way. Recently a manufacturer of ginger ale was fined $50.00 for failure to label his product as a caffeine-containing drink.

METHOD FOR REVEALING MINUTE AMOUNTS OF LEAD ON FRUIT, IN FOODSTUFFS, AIR AND WATER.

Analyzing fruit, foodstuffs and liquids to determine how much lead they contain is not easy—especially if the material to be analyzed is unusually small and the lead in it weighs only a few thousandths of a milligram. Yet such measurements may reveal to scientists a clearer understanding of the composition of organic and inorganic materials, promote better industrial hygiene, and be of great aid to the food industry. Development of an improved colorimetric method for determining minute quantities of lead was reported November 11th, at the annual meeting of the Association of Official Agricultural Chemists at Washington, D. C. It was developed by chemists of the Food and Drug Administration, U. S. Department of Agriculture.

THYROID AND HYPERINSULINISM.

Strides made by medical science in treating thyroid deficiency and performing goiter operations were explained to the assembly of the Inter-State Postgraduate Medical Association of North America, October 17th, in Detroit, by Dr. Charles H. Mayo, of Rochester, Minn., retiring president of the organization.

Treatment of hyperinsulinism was described by Dr. E. Starr Judd and Dr. Edward H. Rynearson, both of Rochester, Minn Dr. Rynearson said he opposed surgery in such cases unless it was definitely established that the patient could not be cured by medical treatment.

LEPERS CURED.

Dr. William Danner, general secretary of the American Leper Mission, revealed that of the 750 lepers admitted to the hospital since 1921 a total of 171 have been paroled as "symptoms free." He estimated that there were more than 1000 lepers in this country.

The remarkable advance in the treatment and cure of leprosy was discussed by Raymond P. Currier, a director of the American Mission to Lepers, at St. Michael's Protestant Episcopal Church, Amsterdam Avenue and Ninety-Ninth Street, New York City.

PHARMACY IN SHANGHAI.

Figures recently published in Shanghai show that in the Shanghai Pharmaceutical Associations there are only twenty-two members who are qualified pharmacists, but that there are hundreds of shops selling drugs. In the French Concession there are 145 drug shops, and only five of these are run by qualified men.

ADDITIONS TO THE HALL OF FAME.

William Penn, Simon Newcomb and Grover Cleveland, were elected to the Hall of Fame in the 8th quinquennial election. The opportunity comes very infrequently and only to a few of this great honor. Elections are held every five years and the opportunity to place some one in nomination who is worthy will not come again until 1940. The fact that the 11th edition of the Pharmacopœia will soon be completed brings to mind the valuable services rendered by Dr. Lyman Spalding. The service which the Pharmacopœia renders is outstanding and preparations should be made to have the founder recognized in the Hall of Fame. While there is absolutely no criticism relative to the high standing of the nominees, it is to be noted that President Cleveland is the only one of the three elected who was born in the United States.

Dr. Lyman Spalding has a long American lineage, a splendid record as an educator and scientist and rendered a service whereby every one benefits. Steps should be taken to pay honor and tribute to the founder of the UNITED STATES PHARMACOPŒIA in the next election to the Hall of Fame.